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Farm Department.

Conducted by J. H. Brown, who lives on his farm at Climax, Mich., which is conducted as the Michigan Farmer Experiment Farm. All correspondence for this department should be sent to Climax.

THE EDITOR'S FARM NOTES.

MORE EXCURSION QUERIES.

As is natural, these keep coming in, and we have replied by mail to several correspondents, aside from replies given on editorial page of the last issue of The Farmer.

We suggest to those wishing to know still more about the "Lake trip" that they write A. A. Schantz, general passenger agent of the "D. & C." line, Detroit, enclosing two-cent stamp for their season catalogue and time table.

Another question is regarding rates to Detroit. Where ten or more tickets are taken from a station one and one-third fare is usually allowed at any time from any point. Make up the required number among your friends near you and congregate at some point on the most direct line to Detroit, buying local tickets to point of meeting, if necessary. We hope to secure favorable rates on all roads and report in next issue.

It is important that staterooms be secured early, so we advise remitting two dollars for each person to The Farmer office immediately, when staterooms will be reserved. Those waiting until the last moment will not secure the most favorably located rooms, and rooms may be all taken. We are assured of having one of the finest trips to be selected anywhere, and a good crowd of "Michigan Farmer Folks."

CLOVER IN THE UPPER PENINSULA.

Being a reader of your most valuable paper, I would like to ask the farmers about fall seeding of clover, and what time to seed.

My land is sand and hard to get a catch on in the spring. Sowed four acres last spring with oats. Had a good catch, but the hot weather has nearly destroyed the young plants.

I think fall seeding with rye will be all right. If any one has tried fall seeding would like to read his experience with it.

I am trying some corn this year to see how it will grow here. Have planted five varieties of sweet corn, and what is called eight-rowed Flint here, and some yellow dent that was raised in Ionia county, Mich.

This is my first year of farming in the Upper Peninsula, but have lived here for eight years. The farmers are doing well, with good prospects for a big crop of almost everything that can be raised in this county.

We are just in the midst of haying now. It is nearly all timothy here. Have a splendid crop of peas and oats.

Chippewa Co., Mich.

(Climatic conditions are so different in the two peninsulas that our advice in seeding to clover, according to our own experience down here might not prove of much value to you.

We should try a small plot of

ground for an experiment in fall seeding. If you are now having some precipitation and enough moisture in the surface soil, we should sow at the rate of one bushel to five acres, scratching the seed in with some light fine-toothed implement. So much depends on the season and rainfall that one must take some chances in any case.

Last season fall seeding of clover was successful, even when sowed as late as September. In your locality we should prefer sowing in July or early August.

Of course, on sandy land it is more difficult to grow a crop of clover, even when one secures a good catch, provided the surface soil remains at all dry for any period of time.

Have you tried crimson clover at all in your county? We should be interested in knowing how this catch crop would succeed if sown in the late summer months. It would be hardly advisable to sow late in the fall, as the plants would in all probability winter kill.

We have seen yellow dent corn in a few portions of the Upper Peninsula that almost ripened before frost. Flint corn and sweet corn does fairly well. No doubt that a very early variety of dent corn would mature in favored locations, after the variety had become acclimated.

CRIMSON CLOVER.

Friend M. F. Woodward, Kalamazoo Co., Mich., writes concerning his success in growing and maturing crimson clover, also best time to sow:

The sooner crimson clover is sown, after harvest, the better, especially if rains have made the surface moist. I sowed my last patch on September 6 last year, but that sown somewhat earlier was a better crop.

It is a grand time to sow now, as we had a heavy rain yesterday, and the ground is in fine order. I am sowing one piece today.

I advise sowing one bushel of seed on six acres of clean ground. But if the ground is foul with sorrel, I would sow thicker—say one bushel to four acres. If the ground is dry I think advisable to roll or float down with a plank drag.

Our friend sent us a sample of his seed, and it is of fine quality and clean. We have just finished sowing six acres of our corn ground to crimson clover.

The ground is clean, except in the drills, in fact, not so many weeds as we have expected. We went through the corn yesterday with a one-horse cultivator having seven teeth and sweeps attached, going once in a row. Sowed the seed on the cultivated strips with a broadcast hand seeder, then followed with the middle section of Breed's weeder.

This is our first practical experience with crimson clover, and it is sown, merely for a catch crop. If it does well we expect to turn it under with a coat of barn-yard manure to grow another crop of corn on the same ground another season. Clover (red or crimson) and manure are helping us out very

greatly in this season's crops. A larger or heavier growth of field corn can hardly be found than ours, so far.

August 6, 1897.

For the Michigan Farmer.

CULTIVATING BOTH SIDES OF THE LAND.

My oldest son jokingly remarked the other day that it would not be many years before pa would be contriving some way to crop the under side of the farm. His remark was based upon my disposition to keep some crop constantly upon the ground, and was suggested just then upon a planting of strawberries we were making between early potato rows, the potatoes being due to be dug about three weeks after the strawberries were set.

A short distance away we have a thrifty growth of potatoes where we picked a large crop of Crescent and Warfield strawberries, the interval between the picking of the last berries and the plowing being just one day. I pass nearly every day the farm of a friend where a thrifty crop of millet is growing upon ground plowed after July 5th, the previous crop being Buebach and Beder Wood strawberries, the plow being started before the pickers had left the field. Near me is a farm which is almost constantly under the plow, rye being the winter crop following oats, corn or potatoes. In sowing corn stubble two rows are cut up and laid among the adjoining corn and the ground cultivated and rye drilled in. Then the cut corn is set up around a "horse" forming the nucleus of large shocks, each containing the corn from 14 rows. After cutting of the corn the ground is fitted and drilled, this being done about as fast as the corn is cut. This method of proceeding costs possibly fifty cents per acre more in cutting the corn, but insures the prompt sowing of the rye and a good heavy growth before cold weather. The corn stubble is not bare through winter, exposed to washing and blowing, and the rye may be stocked to clover and harvested for the grain and straw, or plowed under for potatoes. Of course in following potatoes with a crop the same season it is necessary to dig the potatoes first, but different men show different degrees of promptness in such work. Last fall this neighbor was delayed by wet weather and slowness in ripening, until near the close of September, in harvesting a crop of medium late potatoes planted in May.

However, when the time came he put in a McCallum digger and got out the crop in short order. Then without waiting for the ground to become beaten down by rain or dried in the sun he proceeded to at once sow it to rye. The powerful digger had already plowed two-thirds the ground and leveled the potato ridges into the depressions between the rows, so the battle of tillage was more than half fought. A heavy team was hitched to a wheel cultivator and a float hitched behind this. The combined action of the two

implements mixed and fined the soil and also leveled it. A ten-year-old boy drove the outfit. As soon as turning room was gained the drill with another team was started and the whole nine acres put in in one day. Wet weather followed and had less promptness been used it is likely the sowing of the field would have not taken place for more than two weeks. These up-to-date methods are worthy of careful imitation by farmers who would make the most of their resources in the present close times. A combination of farm and garden crops give the best and closest succession in rotation, and if there is no hitch a large return from the soil. Just for curiosity let me give you one combination. A crop of medium clover is cut the middle of June. The stubble is plowed under and a crop of sweet corn planted. When in tassel about August 15th the final and very light working is given, covering a seeding of rye sowed from horseback. With a good market and fair crop from thirty to fifty dollars worth of roasting ears is harvested per acre, leaving a crop of rye growing. This is manured as manure is made during the winter and plowed under in the spring and planted to strawberries. These are cropped with a stolen crop of snapbeans planted between the strawberry plants in the row, which gives a more or less profitable catch crop according to the yield, and the strawberries are fruited the following year when they may be either plowed under or left to pick another year. If plowed under, sweet corn may be again planted, sowing with rye and stocking with clover, the rye being harvested in due time. In this succession nothing but the final crop of rye has been harvested in a ripe or mature condition, thus the drain upon the mineral elements of the soil has been of the lightest.

More than this, two of the crops, the beans and clover, were leguminous and thus nitrogen gatherers.

L. B. PIERCE.

For the Michigan Farmer.

WEEDERS, RAPE AND CRIMSON CLOVER.

I note the trouble one of our friends has been having with the weeder. Perhaps he is one of those who like a "corn dodger." If so, I have one, never used but one day, to give him for the weeder. I think I have found a new use for the weeder, however, and it may help him out in its use, or aid him to sell it.

Yesterday I sent a man of foreign extraction to rake wheat stubble with the horse rake. Happening over that way soon after, I found him raking stubble with the weeder. It seemed to work admirably, but he found it rather difficult to dump.

I have used a weeder several years, and always like it for corn and potatoes when coming up, and for a week or two after coming up. But when

corn gets up two or three inches, I usually take out one tooth on either side. Men who use the weeder for me often claim it is spoiling the corn, but when I follow it closely I find a small part of it harmed, and let them "ruin" it all. It does the business right in the hill where it is needed, and it does half the harm that people suppose when using it.

Before corn comes up I prefer a light spike tooth harrow, but as soon as the corn pricks through the ground I prefer the weeder. It is also of great service in a root crop. Of course it has no value in breaking lumps on lumpy ground.

A great many people are now considering the matter of crimson clover and Dwarf Essex rape. I have had considerable experience with both, and feel I cannot recommend them too highly. I have 40 acres of Dwarf Essex rape growing. The first sown early in June is now knee high, and is growing like pigweeds only can. I have turned the lambs onto it and they are doing fine on it. The cows have got into it several times, resulting in heavily increased milkings. It is as tender as a young cabbage plant and furnishes a vast amount of feed. No farmer of ordinary industry would ever be without it after raising one crop.

It can be sown in the corn at the last cultivating, and the rains will wash the seed into the ground, and it will produce a vast amount of late fall feed, which will put the stock in prime condition for winter, saving a large amount of grain often required to get the stock started in winter quarters in good shape.

Crimson clover in my opinion is no less a success. Every farmer in Michigan ought to give it a trial. If you have a poor piece of ground where you cannot get a catch of common clover, sow crimson. It can be sown in the corn, after rye or oats, and it will be knee high after the first of May to plow under for corn, or leave for a crop of hay.

All kinds of stock eat the hay with a relish, and it produces a large amount to the acre, more than common red clover. Many rumors are afloat about its being poor hay, and easily winter killed, but I believe most of it comes from those who have had no experience in growing it.

Allegan Co., Mich. A. H. FOSTER.
(The weeder teeth have not quite enough curvature at the lower end to work successfully in raking hay or wheat stubble. As a combined tool, neither the weeder or horse rake can change places, and each do, successfully, the work for which the other is so admirably adapted.)

Have any of our dairy readers made any prolonged experiment in feeding rape to milch cows?

Our advice is to go slow in maturing crimson clover for feeding stock, as the matured heads are more or less dangerous to pass into an animal's stomach. As a catch crop for soiling purposes and plowing under for manure it is a valuable crop—when you can secure it. But, friends, remember that for forage nothing can excel our corn crops in this latitude; and for green manuring and hay, red clover is still "on top."—Ed.)

For The Michigan Farmer.

"SOME MORE" ABOUT THAT WEEDER.

Of the many interesting articles that appear regularly in The Farmer, none have proven so full of interest to us as the one in a recent issue, "A Weeder for Sale," by your correspondent, C. D. Sabin, of Calhoun county.

It struck us very forcibly, because it echoed our first year's experience with a weeder. Had the writer been called on to give his experience after part of a season's use, it would have keyed with your correspondent's, differing only in variation.

A year ago, being quite favorably impressed with the weeder, both from comments in The Farmer and observation, we invested in one of these implements.

For two reasons, first, because we procured it a little late in the season, and second, not knowing how or when to use it, our experience was anything but satisfactory. Being influenced by our unfavorable experience, the writer concluded that the twelve dollars invested in the weeder was the next thing to twelve dollars squandered.

This year we have a little over twenty acres in corn. During the ten days or two weeks before the corn came up, we worked the ground over twice with

a light drag. After the second dragging, and before the corn was large enough to cultivate, a heavy rain came on and packed the surface soil, and later a hot sun thoroughly baked it.

Not feeling disposed to put the drag on again, the writer took a horse and the weeder to see what could be done. The first two or three times across it did very well where the ground was not too hard, in other places it followed the tactics described by your correspondent, "diddling and dancing along in high glee."

The writer soon remedied this difficulty by winding a heavy log-chain about the handles, giving it the necessary weight to make it run smoothly and do business. On the average, we would say that probably the teeth went down about an inch; quite sufficient to break up the crust and destroy all weeds just beginning to take root.

So far as it was possible to see by close observation, the weeder did practically no harm to the corn. It is safe to say that it did not injure more than one blade in fifty, and perhaps a hundred.

We used the weeder on the field in preference to a light drag because we felt that we could do practically just as good work, and do it easier, as the field had a considerable sod over it, besides places where it was very lumpy. Or, in other words, the writer thought that it would be less tiresome to take hold of the weeder handles and raise it over obstructions than it would to run up beside the drag and stoop to raise it every time a sod or lump caught.

As soon as possible after finishing, we turned and went the other way over the piece, with equally satisfactory results, and perhaps even more so, as the teeth were given a better chance to work up the ground.

About a week later, when the corn had become high enough to cultivate nicely, the field was gone over again with a two-horse cultivator, and directly followed again with the weeder crossways. Here the bother began, which evidently so disgusted your correspondent, Mr. Sabin. The writer soon found that if the horse was nervous and inclined to walk fast, it would be no trouble at all to cover up fully half the corn. We remedied this difficulty by putting in a horse that would walk slow, and lengthened the lines so that we could walk about six feet behind the weeder, giving us ample opportunity to see every hill in time to kick any dirt from any covered corn.

By arranging matters thus, the weeder did not cover more than one hill in ten, and as the writer walked between the two rows which were being worked, we did not pass any by. It required a little over a day and a half to go over the twenty acres, the weeder going on the average about three inches deep. This time no weight was required.

The soil in this field is a little of everything, being oak, maple and beech land. But there seems to be very little difference in working the weeder, although we think it is more apt to go in too deep and cover up the corn where the soil is light and sandy. This will be the case if used right after cultivation, but if a shower or two comes in the meantime, little or no difficulty will be experienced.

The writer would like to have any one who is dissatisfied with their weeder, to give it a fair, honest trial, and, so far as possible, follow the directions as given by the Editor. If a moderate amount of care and judgment is used, the writer can see no reason why failure should result.

Shlawassee Co., Mich. C. P. REYNOLDS.

For The Michigan Farmer.

PRICKLY LETTUCE.

I wish to say a word in regard to prickly lettuce. It seems to me there should be something done at once to prevent the spread of the new seed which will be at hand in from two to four weeks. There are thousands of plants now growing through this part of the State.

It seems that there are lots of people who don't know anything about this awful pest, either by sight or by name. Now I think every newspaper in the land should take up this matter and try and waken the people. They should also waken up the proper overseers and try and keep it from spreading.

It is springing up all over the country, in the villages, in the hollows, along the roadside and one might say all over. And if left to go to seed this year there will be no such thing as

getting rid of it. No law can stop it. It is ten times worse than Canada thistle, as the seed will blow for miles. It should be pulled up or cut off beneath the surface of the ground.

I will be pleased to keep it out of my farm, but there will not be one bit of use of trying if it is allowed to go to seed all around me.

Who are the proper officers in the State, county and township to look after this matter? Will say burdock can be easily killed by cutting off with a sharp spade about four inches below the surface and pulling up the top. I for one think we should keep our State as free from such weeds and trash as possible. Do please take up this matter.

Gratiot Co., Mich. O. N. CHAFFIN.

(That's right, stir up the weed question again. What do our readers say? Last year prickly lettuce was a terrible pest in our own neighborhood, but this season, so far, it does not appear to be one-half so bad. Very little attention was paid to it last season, except by a few farmers. Dock has been the worst weed pest this season in many portions of the State.)

The highway commissioners and pathmasters should look after the destruction of all obnoxious weeds along and contiguous to the highway.—Ed.)

THE USE OF THE SCYTHE.

The scythe is a tool of the past generation, one which we have outgrown or, rather, one which has been crowded out by tools of recent invention. Yet it still has a place on every well regulated farm. While it cannot compete in cutting power with those drawn by horses, it is very often a fact that there are places where the more expeditious tools cannot be used.

Perhaps it would be better if we did not have to use it, but until the rail fence departs from our farm its usefulness will be apparent in the corners as well as other places, for the neglect of such places will furnish enough foul weed seed for a supply of the fields even if the fields themselves are kept clean.

If the scythe is not used in waste places, brush and large weeds spring up, these finally give way to larger growths until these waste places have to undergo another clearing up, which in some cases is worse than the first.

The young men of the present generation know but little of the use of the scythe, largely because they depend so much on the use of the mowing machine. But if they knew how to use and take care of a good scythe as well as their grandfathers did there would not be so many ugly waste places on the farms.

One of the first points to remember is that when you buy a scythe you should buy a good one. Just as good a one can be bought now as ever, but the demand for cheap tools has put many poor ones on the market. The first point is to see that the scythe is properly hung on the snath. Much improvement has been made here by the use of nut and screw at the heel instead of the old-fashioned ring and wedge.

Fig. 1 shows one of the points in hanging the scythe to the snath. When using the scythe the heel swings in a circle around the point A (where the mower stands) and the size or depth of the cut will be determined by the difference in two dotted lines, one where the heel of the scythe swings and the other one where the point swings. This depth of cut may be widened by throwing the left nib forward relatively to the right one. So much depends on the user and the crop that is being cut that no definite rule can be given.

While the hanging of the scythe may be important, that of grinding is scarcely less so. Simple in itself, it is often so badly done as to make the using of the tool a burden. As the scythe blade is so thin, there is not much chance for a bevel, but what there is should be on the under side as it tends to hold the scythe from the ground.

Fig. 2 shows a cross section of the blade of the scythe. 1 is a well ground tool, and 2 one badly ground. The blunt cutting edge in 2 is partly the result of bad use of the grindstone, but more often the use of the whetstone. If the scythe is laid flat on the stone and ground back in a straight manner, and if the whetstone is used in the same way, then it will have a good cutting edge, but if it is rounded off in a blunt way then it will work hard.

The use of the whetstone is another

important matter. A short, quick stroke towards the point of the scythe gives the best results, and as in grinding no more whetting should be done than to give a good cutting edge.

Every young man who thinks of becoming an owner of a farm should try to learn thoroughly the use of this tool, as the time is not far distant when the old men who are skilled in its use will be no more.

Franklin Co., O.

E. L. GREEN.

(There is good solid truth in the statement that the scythe is still a valuable tool on the farm. We almost daily find use for one from the middle of May until the first fall freezes occur.)

Just now we have a lot of weeds in the fence corners that ought to be cut out before going to seed. Some of them have already done so. But the writer has very little time for doing this work now, and very few young men can properly handle a scythe for one-half day without easily accomplishing its destruction or rendering it almost worthless.—Ed.)

For The Michigan Farmer.

CISTERN CONSTRUCTION.

In answer to J. B. Wellemeyer, as how to build a cistern. If his land is sandy, I would dig the cistern as large as required, then plaster with water lime against the side on the sand until within 18 inches of the top.

Dig a space of four inches around, then brick up, narrowing as you go up. Make in the form of a jug. I have one made in 1878, which is as good as ever now. The cost is very light.

JAS. K. CRAM.

Lenawee Co., Mich.
(More cisterns are built after this plan than from any other. We have two on our own farm, built in this way, both having rendered good service, and needing no repairs.—Ed.)

For the Michigan Farmer.

NOTES FROM NORTHERN MICHIGAN.

Our summer has just commenced up here (July 1), as we have had a very cold, backward spring, the coldest I have seen in 27 seasons.

Some corn is just beginning to come up, and the cutworms are fast taking that.

North and west of here is the fruit belt of our county. The fruit yield will be quite uneven this season. There are a good many "Grangers" in this section, and the Grange sentiment is strong.

The farmers have taken your advice and cut out the rye from their wheat. Wheat is quite spotted in this vicinity, being badly winter killed.

Is white clover good for a hog pasture?

Antrim Co., Mich. G. R. GURR.
(Yes, white clover is all right, but we would not depend on that entirely if red clover can be grown.)

Have you tried growing oats and peas for a soiling crop for hogs and milch cows? If not, try a patch next spring.

White clover has come in everywhere this season on our farm, where it was not crowded out. Our young Duroc Jersey pigs are now trimming down a patch in the orchard. It does not furnish near the amount of forage that red clover does.—Ed.)

For the Michigan Farmer.

WIND POWER EXPERIENCE.

Please allow me space in your valuable paper to give my experience with a power windmill, as I have one upon my barn, and ground four thousand bushels of grain last year, besides cutting feed for seven head of cattle and four head of horses, and shelling the corn that was ground.

I have run this mill two years and the expense has been nothing except for oil and grinder burrs. It is a twelve-foot wheel erected upon a mast for a derrick. I prefer this kind of a derrick for a mill upon a barn, as everything can be made tight around it, so that there is no leaking upon your mill. And by setting it upon one side of the barn floor it takes up very little room.

It will grind when the pumping mill will pump. I use two sets of burrs: one is fine and the other coarse. With a light wind I use the fine burrs, as they feed lighter and do not need to shut them up so tight. When there is a good steady wind I use one fine and one coarse burr.

These burrs will grind nice feed. With a strong wind use both coarse

burrs, and it will grind a bushel in four minutes, and run a cutting box or sheller at the same time.

There are five of these mills in a radius of seven miles, all twelve-foot wheels, and erected upon masts, and are all doing good work.

Of course there is a great difference in wind locations. The wheel should be above all wind obstructions, so that the wind can strike it from all directions, in order to run good all the time. One set of burrs will grind 1,000 bushels of feed. Can grind nice graham and fine meal by running it through twice.

But you must not expect a windmill to run a grinder that it will take an engine to run, or you will be disappointed. The grinder should be according to the power.

My experience has been very satisfactory with a windmill, and when we have work to do we run it night or day, when the wind blows. Our hopper holds 12 bushels. We very often grind this out while we are doing the chores and eating our breakfast.

I am a farmer and have written this simply to give my experience.

Oceana Co., Mich.

C. L.

(In order to secure the very best results, the wind wheel should be at least 20 feet above the barn roof and all obstructions within a radius of 500 feet.

Many wheels are not placed high enough and do not receive a direct air current at all times. On this account there is much twisting of both wheels and towers. For the majority of storms a high wheel will "stand the racket" far better than a low one near the roof or down among the tree tops.

Consequently, when erecting a mill on a barn already built, we should prefer the new style steel towers, rather than a single-masted derrick. A heavy four-post steel tower (4-inch angle steel), when set up, girted and braced, and attached to beam and purlin by heavy stub feet, is so strong and rigid that nothing less than a veritable cyclone can wreck it.

When erecting a new barn a mast can be framed in, stayed by truss rods, placing the wheel 20 feet above the ridge. It would seem to us a difficult thing to accomplish on an old structure, without using a steel tower.

We can testify to what our friend says about the work his mill can do, for we have seen the same mill do such work in a score or more of forms.—Ed.)

The Dairy.

We have a complete Dairy and Farm Creamery in constant operation on the Experiment Farm at Climax, Mich. This is personally conducted by J. H. Brown. All dairy correspondence should be sent to Climax, Mich.

For the Michigan Farmer.

TREATING A CASE OF MILK FEVER.

In a recent Farmer a reader inquires about what to do to prevent milk fever and what to do to cure if a cow has got it. Such an experience I lately passed through, and years ago we suffered severely by the dread disease.

In the first place I would try to prevent the malady by having the cows drop their calves during cool weather, or at least in any other time than during the hot time of year. This I believe to be the first best measure.

Next, do not let your cow become too fleshy, if she is a deep milker. Ways to prevent this ought to present themselves to any one. Next keep your cows in a cool, airy place, where they are perfectly contented with their surroundings.

Feed such food only as will have a tendency to keep the bowels rather loose, if anyway, and if at the time the calf is expected to be dropped, everything is apparently all right, give the lightest of feeds, with access to plenty of good clear cool water until she has dropped her calf. After that event give water with the chill taken off, and not to any excess.

Be very careful about giving any stimulating feeds for several days. Very many cows are killed by our kindly feelings toward our best cow, so we begin to stuff right away with lots of good hay and cornmeal to build them up and produce a big flow of milk, and milk fever is the result.

I have found that cut potatoes, a half-pailful to a feed, with a little salt thrown in, fed to cow once a day for about a fortnight before calving, about the right thing to keep the bowels in the right state, without using any other

physic. This quantity is for a good-sized cow; give less for a smaller one.

If I had neglected doing this, or something else to procure the same result I would give one pound of epsom salts to a medium-sized cow about 24 hours before the calf was expected. I would give this only to such cows as from their fleshy condition and being heavy milkers, were likely to come down with this disease. I never knew any cow to have this malady but a first-class cow, and nine times out of ten in hot weather.

While I should milk a cow if I thought it necessary to relieve her, I do not believe it prevents the disease in the least, but if either it would have a tendency to produce unfavorable conditions, except within a day or two of calving.

If you have allowed the cow to get too fat and otherwise have not given her proper attention you will now want to know how to "doctor" milk fever. The cow I lately doctored is an excellent one I have rented, with other stock, with a farm near me. The man came over two hours after the cow dropped her calf and told me the red cow was sick. After asking a few questions I gathered up a few medicines and went with him.

I saw the cow and told our man I did not believe there was any help for her, but to take his horse and buggy and go for the veterinary, four and one-half miles away; that possibly he could do more than I could. I immediately gave her two teaspoonfuls of laudanum and one teaspoonful of tincture of aconite. She was still standing on her feet, but trembling and legs braced every way to prevent herself falling. In an hour the "vet" was there and he gave his medicine, which was belladonna and chloral, and we gave that every two hours till night, when we began giving my prescriptions again which was, after the first heavy dose, one teaspoonful of laudanum and one-half teaspoonful of tincture of aconite every two hours.

I had perhaps one and a quarter pounds of salts which I gave an hour or so after the first dose of medicine. Gave the cow injections after backraking her every two or three hours, and after two hours she lay upon her sides for nearly 48 hours before she got up again; she did not show any signs of recovery till about 36 hours after, and a good share of the time we thought she would surely be dead in an hour or two more.

After waiting 30 hours for physic to operate I gave her a quart of raw linseed oil, with 20 drops of croton oil in it. This came through in about eight hours. She had revived a little before the physic operated, so that she drank a pail of water. When she got better we lessened the doses of medicine, and lengthened the times between till she got on her feet again.

Now I have written thus fully, although I have left out many little things like keeping the cow covered and warm, although we were sweating with our coats off; rubbing the cow all over to keep up circulation, giving some other little medicines; trying her with water to drink which she only just tasted till she got better. We put some down her, however, and gave her other little attentions that would occur to one's mind attending a sick animal.

If this will do good to anyone that has a cow sick with "milk fever," you are welcome to my trouble. This is the second cow I have saved that had milk fever. Over 30 years ago I lost five valuable cows with it.

Eaton Co., Mich. ALLEN CRAWFORD.

(Our brother dairymen now seem to understand so-called milk fever far better than was admitted possible a few years ago. Friend Crawford's course of preparatory treatment is quite similar to that followed by many of the most progressive dairymen in the country.

It has seemed to us that the seat of the difficulty with cows threatened with this so-called disease has been in the third stomach and due more or less to impaction of its contents. Although we believe in feeding for several weeks before parturition so as to keep the bowels loose and prevent this sudden impaction, it sometimes happens that, even in a few hours, the contents of the bowels will become so dry and hard that nothing can be forced through.

For this reason it is best to use artificial means to keep this passage open. We have found nothing better to use periodically than one pound of epsom or Rochelle salts and one to two ounces

of best Jamaica ginger compounded according to size and age of the animal.

We doubt whether there is a case of milk fever that could not have been prevented, if the cow was in good health when taken, if the treatment had been such as to keep the bowels open every hour.—Ed.)

THE HOME DAIRY.

Friend Gould closes an article in The Farmer recently with the following question: "After you have succeeded in making a better quality of butter what are you going to do with it? Are you going to continue to trade it for soap at the rate of six bars for a quarter?" The question is pertinent, and I want to ask Friend Gould a question. Did he ever know any one to take the trouble to inform himself on the best methods of butter-making, such methods as he advocates, follow them out successfully, and then continue to trade at the corner store, taking store prices in trade for soap?

My mind goes back to Ohio where many of my friends, as well as myself, learned from our friend, then "Sam," the art of butter-making, through the columns of The Farmer. How eagerly wife and I used to devour these articles! How we used to love to sit in farmers' institutes and listen to Sam expounding the new dairy gospel! I speak not only for ourselves, but for many of our former neighbors and friends. No, Friend Gould, none of them who had the ambition to learn to make good butter are now trading their product for soap six bars for a quarter. Nor do I know of one person in my extensive acquaintance who has mastered the art who is not being rewarded for his efforts. Many of course made a half-hearted effort, but for the want of energy fell by the wayside.

There is always room at the top, and there is something in the art of butter-making that seems to beckon one to greater exertion in disposing of a fine article at least paying prices. But I say that the same quality of energy and push that enables one to master the art will enable him to get pay for his labor without taking it out in soap.

To those who are making an honest effort toward improvement, I say don't stop because there is a perfect jam at the foot of the ladder of trade. There is plenty of room up a little ways. First be sure you make good butter, then you are ready and able to climb above the crowd at the bottom, and "get there" you will if you determine to do so. I have never seen one fail.

But the art of butter-making is not so complicated as some seem to think. I know it is the custom for some dairy writers to talk of bacteria, ferments, lactic acid, etc., which to the average person are dark and mysterious things, but a perfect knowledge of these agencies in dairying is not essentially necessary to success.

The most essential thing in the home dairy is within the reach of all, and it is simply habit. One must, if he expects to succeed, form the habit of doing things at the right time. It will not do, when the cream is ripe for churning, to set it aside to wait your convenience. Cream passes rapidly from one stage of acidity to another, and only at one stage will it make fine butter. It will not do to depend on the finger to determine the temperature of the cream for churning, the year round. A good dairy thermometer costs but little. It will not do to churn butter until it gathers in large lumps in the churn. Stop the churn when the butter is small granules. Wash out the buttermilk, salt it in the churn, and pack it direct from the churn. It will not do to let the milk stand around for an hour or two after it is drawn. The boys and cats will get the cream and the "things" John Gould spoke of will get in it. Strain and set it away and disturb it as little as possible until the cream has risen. A jar while the cream is rising will set these small butter globules scurrying in every direction, many of them never to rise again. It will never do to get fertilizer in the milk while milking. Cow stable fertilizer is a good thing to make crops grow, but a poor thing to flavor butter with. Once let it get into the milk and you can't strain out the effect, and your customers will complain of a "cowy odor" in the butter.

It will not do to be slovenly with anything connected with the dairy. Slovenliness breeds "things" that destroy the flavor in your butter. Everything must be kept clean—churn, cans, crocks, pails, everything that milk comes in contact with in any way.

For the benefit of those who think this matter of cleanliness is not so important, I will relate a little experience we had this summer: A can of buttermilk was accidentally upset in front of our dairy room door, on the ground. The weather was warm with frequent rains. It was only a few days from the time the milk was spilled until we began to have trouble with our cream and butter, and the trouble continued until we had a couple of sunshiny days so we could give the dairy room and fixtures a sun bath. The witches were not responsible for this condition of affairs, but the bacteria which bred in the buttermilk and filled the dairy room got into the milk while it was running through the separator, and they were responsible for the trouble.

While I sometimes think people are over-advised in being cleanly about the dairy, yet on this hinges our hope for success in the home dairy. With the habit of doing things at their proper time and doing them right it is no such task as one might infer.

M. E. KING.

(Even when one knows how to make good butter, good butter cannot be made unless one is willing to work daily along a prescribed line, without variation, until by mere force of habit the routine becomes a sort of "second nature" job.)

Few of our best butter makers make dairy as good butter as they know how. Judge then of the quality of the product made by thousands of farmers and farmers' wives, who never read dairy literature or know how real creamery butter is made.

Of course it is not so essential that butter makers on the farm know all about bacteria, lactic acid and ferments, but we never stepped into a farm home where farm papers were taken and read, that the farmer or his wife did not understand the above mentioned "things" intelligently enough for all practical purposes.

It is necessary to understand all about storing and ripening cream, controlling the temperature, and when to churn. When one understands these things and practices them, then one becomes an expert in this line.—Ed.)

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Live Stock.

A WORD TO SHEEP BREEDERS AND FLOCK OWNERS.

There is every reason to believe that for the next eight or ten years the sheep industry will be greatly developed and extended. In fact it must be to meet the new demands which will come from the enforcement of the Dingley tariff bill. To doubt this would argue a lack of business foresight and a knowledge of past results under like conditions. There is not in the United States to-day one-half the number of sheep to produce the wool and mutton wanted by its people. It is safe to say that not until the flocks of the country have reached 100,000,000 will they be in a position to do this. Up to that time the demand for these two staples must result in a higher range of values for these products, and the animals which produce them. If the value of the flocks in the country does not appreciate fully 50 per cent during the next two years we shall be greatly disappointed. They are worth 50 per cent more in actual cash value to-day than at this date a year ago, and probably most of them have doubled in value.

With these preliminary statements, we wish to impress upon the breeders and farmers of Michigan the opportunity they now have to extend or engage in the sheep business. It has better prospects to-day from a business standpoint of actual values than ever before in its history. They have the assured market of 70 millions of people, who are the best customers in the world for what they want. Their wants will increase with improvement of business and the increase of their earning capacity as the result of better industrial conditions. There will be a steady increase in the demand for food and clothing from this time forward, and at appreciating prices. There is no State in the Union better suited by soil and climate than Michigan for carrying on the work of breeding sheep. This has been proved in the past, and if our breeders are wise and awake to the opportunities and necessities of the future, it will be again. Michigan flocks should represent the highest development of the different breeds to which they belong, and be in the future, as in the past, the resort for stock to improve the flocks of other and less favored States. It is a great opportunity, and no time should be lost in taking advantage of it. Let the old veterans renew their youth, and the young men take hold of the business with a determination to do their best to help along the good work of keeping Michigan's flocks in the van in the march of improvement. We want the flocks of the State doubled. Four millions of sheep is not too much for a State with an area as large as England, where 25,000,000 are kept. There is plenty of room for expansion, and in all directions. Don't worry about breeds. Choose the one which suits you best, only keep up your flock to a high standard. Add to it every year until it is as large as you have room for on your farm. The income will be sure, and increase with the value of the flock. Every improved breed will be wanted—everything that will furnish good wool and mutton. Never were manufacturers using such a variety of wools as at present. From the finest to the coarsest, all are in demand, if of good quality. You can't make a mistake in selecting a breed, if the animals properly represent that breed. If your flock is not what you want, go to work to improve it in the direction in which it is lacking. Good sheep are wanted now; there will be a far more urgent demand for them a year from now. The men who can meet the demand will be the ones who will profit by the new conditions which more prosperous times and assured markets will bring to the farmer as well as the business man and laborer.

PRODUCING LEAN MEAT.

A few weeks ago we had an article on this subject, suggested by a discussion of which breed would make the best bacon hog. We took the ground that any of the improved breeds, if bred and fed with that end in view, would answer quite well. That it was the feed and method of handling which produced lean meat; that plenty of exercise would develop muscle, and

muscle was simply lean meat. The hog confined in a pen and fed on corn would never make a good bacon hog, no matter what breed he belonged to.

In a recent letter to the American Swineherd, Mr. C. Fred. Boshart, a well-known breeder, in discussing the good points of the Berkshire, has this to say of the bacon hog:

"There are breeds which claim to be the bacon and lean meat hog. They are coarse in all their parts, long maturing, unsightly in appearance, and when once reared are generally discarded.

"If you have lots of money and wish to try the experiment, procure a pair of Tamworth pigs, grow and breed them, and then compare the offspring beside the fine, improved Berkshire. The experiment may be costly, but not long, and you will be satisfied that for profit the Berkshire has no superior; has been perfected to meet the requirements of all people in all climates.

"To make lean meat, the cheap foods, which are so beneficent to health and natural of swine, should be supplied. In summer allow them good pasture, feed weeds, vegetables, etc. An acre of sweet corn fed to hogs green will go a long way in making lean meat. Weeds should not go to seed, and if pulled and fed to swine they make excellent pork. Cheap feeds make the best pork, as they produce lean meat.

"Confinement in pens makes the pig indolent and has a tendency to increase fat. With plenty of exercise their muscles develop, and this muscular part is the lean part.

"Reduce the fat, increase the lean, and if your pigs are kept all their lives in pasture, with skim milk, bran and corn meal, you will not only produce the best kind of lean meat, but produce it on the gain side of the ledger."

A BRITISH VETERINARIAN ON TUBERCULOSIS.

Prof. McFadyen, principal of the Veterinary College, London, who is regarded as the best authority in that country on the disease, in a paper read before the Newcastle Farmers' club, said the modern view of tuberculosis was that it was purely contagious, and due to the presence and growth of a specific bacillus. The growth of this bacillus is slow under the most favorable circumstances, and unless it was kept at a temperature of about 90 degrees Fahr., which approaches that of the animal body, it makes no growth at all. The germs of tuberculosis may be transferred directly from one animal to another, but in most cases they are transferred indirectly, as when they are voided on the floor or walls of a cattle-shed, and, after drying, float in the atmosphere. The disease is much less likely to spread when the animals are in the fields or pastures than when they are indoors, as the germs perish when exposed to sunlight. A few years ago tuberculosis was believed to be hereditary; but that view has been generally abandoned—tuberculosis in new-born calves being very rare. The proportion of tuberculous calves under a month old is not over one in 10,000, while the disease is rare in yearlings, less rare in two-year-olds, and common among adult cattle. The only danger of communicating the disease in milk is when a cow has a tuberculous udder, which can easily be detected. As to meat, the visibly diseased parts are always dangerous, and in rare cases there may be tubercle in the edible portions of the carcass, but not often. The professor advocates the abolition of private slaughter-houses, in order that all abattoirs may be under official inspection. As to milk, it is rendered safe by boiling, and the professor would not let any child of his have unboiled milk. Stockowners could easily rid their herds of tuberculosis by having the tuberculin test applied, and separating all the animals which show reaction to the test, killing and burying those really ill and wasting and fattening the rest. The best time to apply the test is in the spring, so that the affected animals may be fattened out of doors. After taking the affected animals away from healthy ones the premises should be thoroughly disinfected, and good ventilation ensured. The worst difficulty is that tuberculosis in cattle is the same disease as consumption in human beings, so that even if the former were stamped out animals might be reinfected from mankind.

While we do not like to differ from a recognized authority like the professor mentioned above, we would caution cattle breeders against accepting his view that the disease was purely con-

tagious, and not hereditary. There is no doubt but that it is contagious, both in animals and in the human species, and we have every reason to believe that it is also hereditary in both. To deny the latter would be to ignore too many well authenticated instances where the offspring of diseased parents fell victims to the disease. We doubt if there are many readers of The Farmer who have not observed the disease being continued from one generation to the other, either in animals or human beings, under conditions which proved that it is hereditary. It is true the disease seldom appears in young animals or children, but in each the years of early maturity are sure to bring out the lurking germs of the disease, and the victims die as did their progenitors. To accept Prof. McFadyen's conclusions, and use diseased animals for breeding purposes would be not only foolish, but criminal, and yet if he is right it would be safe to do so. We have seen the disease last through three generations, where the progeny had been removed early from their dams and shipped to widely separated neighborhoods, but invariably when the animals approached maturity the disease appeared, and death followed. We believe tuberculosis to be hereditary and contagious, and that it can be, and is produced by unsanitary conditions and improper management, both in animals and mankind. Its greatest foes are fresh air, sunshine and the vigorous health that comes from living under proper conditions.

STOCK NOTES.

An English writer on live stock says that breeding together young and immature animals will assuredly lead to a decrease in size of the breed, and render it less vigorous. It is especially so with hogs, cattle and horses. The natural tendency of a breed is to decrease in size, and this tendency is intensified if only young animals are bred from.

The demand for Shorthorn bulls in this and other western States is very active. It is difficult to secure even a car-load of good bulls fit for service. The cattle-growers of the west are all looking for bulls of the beef breeds, and there is every prospect of a good demand for all that can be raised at very fair prices.

The National Live Stock Reporter thus refers to a difficulty all stock papers have in attempting to get a correct report of the sales of live stock: "One-third of the country shippers did not want their cattle quoted in the paper to-day. They want market reports to be truthful, complete, and correct for their own reading, but they want something that is not correct or complete published for the benefit of other people."

More merchandise was exported from the United States during the fiscal year ended July 1 than in any former year in our commercial history, the value of the same reaching the enormous total of \$1,032,908,880 gold. Total imports were \$64,373,905. Exports aggregated \$170,000,000 more than for the previous year and imports \$15,350,000 less. This account against foreign nations contains a little item of \$582,757,428 for products supplied by American farms, of which \$230,000,000 was paid for cotton, \$100,000,000 for breadstuffs, and \$162,000,000 for cattle, hogs, and meats.

Australia has 120,000,000 sheep and produces about 675,000,000 pounds of wool annually. Her population is small and her woolen manufactures not worth mentioning, so, practically, her entire wool clip has to be exported, and sold in the cheapest markets in the world. It has been Australian competition which forced down the price of wool to the low point reached last year. The United States has about 36,000,000 sheep and 70,000,000 people. Her manufactures require about three times the amount of wool now produced to keep them running the year round. The new tariff bill gives this market to the American wool-grower, and assures him of its possession until wool reaches a point which would allow of its being brought in at a profit. It is easy to see just what advantage the American wool-grower will have over his Australian competitor in the future. It is an advantage of about eight to nine cents per pound, and will not be lowered for the next four years at least.

The West Virginia Experiment Station recently issued a bulletin on Mutton Sheep in West Virginia. Prof. A.

D. Hopkins sent out a circular to correspondents all over the State, containing inquiries on the subject. One question was, "Do you consider sheep as profitable as any other farm products; if not, what is more profitable?" Ninety-one correspondents said that sheep paid the best, three favored the dairy, one cattle, and one cattle and sheep together. By replies from 127 correspondents the following information was gained: For the favorite ram to cross with common ewes to produce mutton sheep, the votes were: For Southdown, 64; Shropshire, 26; Cotswold, 11; scattering, 12. To produce market lambs: Southdown, 44; Shropshire, 30; Cotswold, 12; scattering, 14. Breeds which seem to be favorites: Southdown, 45; Shropshire, 30; Cotswold, 7; Merino, 22; scattering, 17. Predominating blood in improved grades: Southdown, 39; Shropshire, 11; Cotswold, 12; Merino, 20; scattering, 6. West Virginia, and in fact the northern and western section of old Virginia, is an ideal country for sheep, and the worn-out lands would be greatly benefited by their presence. The soil, climate, grasses, and water are just what sheep require.

The Horse.

THE PROSPECT FOR GOOD HORSES.

A large dealer in horses, writing to the St. Louis Live Stock Report, says there was never in the history of the business a brighter future before the American horse breeder than there is to-day if he will raise the proper kind of horses. The oft-repeated injunction has gone up continuously in the past year to farmers from the various horse papers of the country to commence breeding their good mares to stallions of honorable reputation for that the number of good horses was rapidly growing less and a dearth of high-class ones was imminent. What effect it will have remains to be seen. To the uninformed it probably has appeared as an exaggerated statement or overzealous fancy of the ordinary alarmist, even in the face of government statistics. But to the commission dealer, the horse buyer or those daily in touch with the great markets of the country that such a condition is uncontrollable truth. The scarcity of high-grade horses is shown in the daily receipts at all the great markets. The heavily decreased breeding in the past five years throughout the entire States on account of the ruinous depression of prices has been the chief cause. Farmers have bred common mares to common stallions because it was cheaper and that much expense in getting foals was not justified by prices. They got small, ungainly, common animals that did not pay the cost of raising and were further convinced by the results that there was no money in the horse business. But enough about the cause. The scarcity prevails in an aggravated degree just when the supply should be larger than ever before. In the past two years European countries have taken decidedly to American horses and the demand is increasing with every year. Right now are a hundred foreign buyers in the various markets in quest of good horses and it is safe to say that not half of them could be gratified with a car load apiece of the class they most desire. It may be a broad statement to make, but where could one thousand first-class coach horses without serious blemish (the irrepressible sidebone included) be gotten together? Buyers say they cannot find them in the country, and if not where can they be found? Of course, extra draft horses are also wanted, but high-class harness horses take precedence. Now if conditions are as they are claimed, facts bear out the promise of a heavier demand and higher prices for the near future. The harvest of the ingenious producer appears to be in sight and breeders should take advantage of it. If we can supply the European countries with horses and please our purchasers a lasting and lucrative occupation awaits the American breeder. Breed for size, quality, conformation and soundness in the coach or carriage horses with as much action and speed added as is possible. The highest type of this class is bringing handsome prices from exporters. In the heavy draft horse there must be weight, size, quality and enduring power, soundness of bone and foot and good disposition.

HORSE GOSSIP.

The Lorillard-Beresford stable won the Nevill plate of 200 sovereigns (\$1,000) at London last week. The Americans seem to be getting a fair percentage of the money at the English meetings.

Marion Mills, the "guideless wonder," who made her fastest record in this city, is said to have developed into a good deal of a rogue since then, and in recent exhibitions it was found necessary to station parties along the track to "throw things at her" to scare her into keeping up her speed. It is not to be wondered at, as she is being worked very hard, and has proved as good as a Klondyke claim to her owner.

The famous thoroughbred stallion, Strathmore, died at Lexington, Ky., last week from the intense heat. He was 21 years old, sired by Waverly, he by Brown Dick, son of imp. Margrave. His dam was Brenna, by imp. Knight of St. George; g. dam, Levity, by imp. Trustee. He was a fine race horse himself, and achieved a great reputation in the stud. His get has won over \$500,000.

What is known in Missouri as the Breeders' law, under which pool-selling and bookmaking were prohibited, excepting on race tracks, has been pronounced unconstitutional by Judge David Murphy, of the Court of Criminal Correction. This will probably have the effect of reopening downtown pool rooms in St. Louis, which have been closed up since the law went into effect.

Nominee, by Stranger, won the grand international free-for-all at Moscow, beating Valley Queen, Monette, and the Russian horse Loli, in 2:20 1/2, 2:19, 2:20 1/4. The second heat was won by Nominee by a neck, but the public insisted Valley Queen should be placed first. They attacked Will Caton, who drove Nominee, and Caton defended himself with his whip. Caton's action may cause the loss of his license. That's the difference between Russian and American equity.

Mr. James A. Murphy, who owns Star Pointer, said in an interview recently: "Joe Patchen may some day, when just right, beat Star Pointer, but I doubt that." And the Breeders' Gazette said: "Every time at Washington Park that McCleary let go the least bit the 'Pointer horse' gained perceptibly. Joe Patchen must catch him off condition if he beats him." Well, Patchen has beaten the Pointer horse, beaten his best record, and there is no claim that Star Pointer was out of condition.

At the Brighton, England, August meeting last week Richard Croker's brown colt, Leatherstocking, ran a dead heat with the Daisy Wreath filly in the race for the Kempton plate. This event was for 2-year-olds. There were ten starters, the course being about five furlongs. The heat was run off later in the day and Leatherstocking won. Leatherstocking was sold, under the rules, to J. Bleackley for 310 guineas. Mr. Croker's 5-year-old bay horse Americus won the Southdown plate. This race is of 200 sovereigns for 2-year-olds and upward, the second horse to receive 10 sovereigns out of the plate. There were four starters; distance about six furlongs.

At the Columbus meeting, in the free-for-all pace, the starters were Joe Patchen, Star Pointer, Lottie Lorraine and Badge. The first two horses had met in contests at Chicago and Cleveland, and each time Pointer was the winner, and apparently with something in reserve. He was therefore regarded as invincible. In the first heat Patchen won in 2:04, after a sharp contest; in the second there was a great struggle, each driver determined that he would reach the wire first, and the horses doing their best. They finished so close that Patchen only won by a head in 2:01 1/2, equalling the best race record. This apparently discouraged Star Pointer, for he was third in the next heat, also won by Patchen, in 2:08. Lottie Lorraine was second in this heat and got third money. It was a great contest, and the time of the fastest heat very remarkable so early in the season. Joe Patchen is a large, handsome black stallion, of high breeding and should make a great sire when placed in the stud.

Col. W. L. Simmons sat in the rotunda of the Russell and smiled the satisfied smile of a man who is at peace with the world. The colonel is a Kentuckian of the thirty-third degree, that is to say he is a

Kentuckian from Lexington, and this particular breed of Kentuckian out-classes all other natives of the State just as they out-class the unfortunate mortals who happen, through some carelessness, to have been born outside of the blue grass country. By the history of the American turf the colonel is convicted of being much older than a careful observer would judge him to be, for it does not seem probable that this elegant looking gentleman could be old enough to have bred all the celebrated horses among the trotters, such as George Wilkes and Simmons, and the runners that are credited to his farm by the official records.—Detroit Free Press.

Which reads very pretty, but is slightly inaccurate. Mr. (not Col.) W. L. Simmons is a native of New York City. He did not breed George Wilkes, but purchased him from Col. Felter, of Newburg, N. Y., who bred him. Mr. Simmons, after purchasing George Wilkes, took him to Kentucky and kept him there until his death. A good many of these "Kentucky gentlemen" had the misfortune to be born in other States, and other great horses besides George Wilkes were bred many miles from that State. Mr. Simmons bred Simmons, one of George Wilkes' best sons, after he went to Kentucky, and that is about the single grain of truth in the whole paragraph, which is published as gathered from the "history of the American turf."

Veterinary Department.

CONDUCTED BY DR. W. C. FAIR.

Advice through this department is free to our subscribers. Each communication should state history and symptoms of the case fully; also name and address of the writer. The initials will only be given. When an answer is requested by mail it becomes private practice, and a fee of one dollar must accompany the letter.

Impure Blood—Hives.—My ten-year-old mare was in good health. One morning lumps appeared on side of jaw and neck. Later in the day bunches appeared on her side and lower portion of the abdomen and legs. These bunches vary in size. Some of them discharge a gluey substance. Appetite is good. She feels well every way. A. J. L. Milan, Mich.—Give one dram iodide of potash, one ounce fluid extract sarsaparilla three times a day until they disappear. Put two ounces acetate of lead in one-half gallon water and apply it to bunches that discharge twice a day.

Sweeneyed Shoulder.—High-grade Clyde mare, four-year-old, is sweeneyed in the left shoulder, the depression being very marked. Have used her on farm all summer. Do not know of her having met with any injury. She has not been lame that I have noticed. Has been in pasture when not in use. No soreness in limb or shoulder. Is there any cure for it, and what treatment would you recommend? E. W. M., Bridgeport, Mich.—Either insert a sear under skin of shoulder, or blister it with caustic balsam once every ten days, until she gets well. Moderate exercise will do her no harm. In fact, it will rather assist in developing and curing wasted muscles to their normal size.

Worms.—Five-year-old driving horse is troubled with worms. C. P. P., Owosso Mich.—Give him one dram santonin once a day for a few days. Also give him plenty of salt in his feed.

Warts.—I bought a bunch of yearling cattle shipped from Iowa this spring. Among them was a heifer that had warts about the size of marbles all over her body. Now they have grown and increased and hang in great bunches, especially on her neck, though more or less all over. Will others take it from her? Heifer seems to be thriving and in good flesh. M. S., Grindstone, S. D.—There is no danger of your other cattle catching it. Remove warts with a sharp knife and apply tincture iron to wounds every few days. Warts are confined to the skin, and if once entirely removed will never grow again.

Enlarged Teat.—Young heifer is due to calve in a few days. For the past two months one of her teats has enlarged to twice or three times its natural size. It appears as if it were full of milk. Teat is not much inflamed. Is there anything I can do for it? G. S. M., Wheeler, Mich.—Use a milking tube and drain teat and quarter of its milk. Apply hot water twice a day until inflammation subsides. Notice that she does not bruise her udder when she lies down. If she does, furnish her with plenty of bedding. If you do not stable her, notice that there are no stones or pieces of wood where she is in the habit of lying down. It is very likely that sore teat

is the result of a bruise. Apply equal parts extract witch hazel and tincture arnica to udder after fomenting with hot water. It is possible that you can milk her without a milking tube.

Knuckling—Bone Spavin.—Four-year-old horse is cock-ankled. Has some swelling in fore part of ankle joint, also in front of hock joint. Puff in hock joint is soft. Horse is not lame. He did have a curb, but I reduced that. Have used him on farm. Also eight-year-old horse is lame in hind leg. Went lame six months ago. Think it is in stifle. Have tried several kinds of liniment without success. He stands on toe when resting leg in barn. Has not been worked much since he went lame. Cannot find any heat or enlargement. W. H., St. Louis, Mich.—Blister fetlock and hock of four-year-old, also hock of eight-year-old horse with caustic balsam once every two weeks. I think your eight-year-old horse suffers from occult spavin. Had he been sprained in stifle the long rest he has had would have cured him. Repeated blisters will cure your horse from knuckling. He may come honestly by the puffs in his hock. If it is hereditary for him to have it, you will find some difficulty in reducing swelling.

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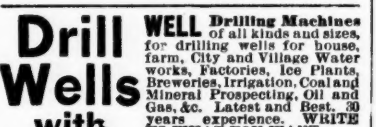
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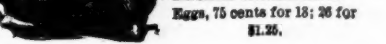
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Farmers' Clubs.

CONDUCTED BY A. C. BIRD.

All correspondence for this department should be addressed to A. C. Bird, Highland, Mich.

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All communications relating to the organization of new Clubs should be addressed to F. D. Wells, Rochester, Mich.

LOCAL CLUB METHODS.

The article in last week's issue by Mrs. Beckwith describing the methods of work in vogue in the Highland and Hartland Club, and that in the present issue by C. P. Reynolds upon the same subject applied to the Maple River Club, are but the beginning of a series to which we hope many of the clubs of the State will contribute through their secretaries.

We thoroughly believe in the practicability of such articles. Through their publication a complete interchange of ideas relating to club work will be secured. No club has its work so thoroughly systematized and perfected that new ideas and changed methods are not occasionally welcomed; and from this series of articles every club in the State should be enabled to glean much of value along the line of diversified club work.

We wish to especially commend the innovation of Mr. Reynolds in prefacing his article with a short history of his club. The clubs of the State wish to know, and ought to know more of one another, and such information can in no way be more satisfactorily obtained than in the carrying out of the plan involved in the publication of such articles.

The success of the plan rests largely with the local clubs themselves. A general response to our invitation for such articles will assure success. Nothing else can do so.

MAPLE RIVER FARMERS' CLUB—WORK AND METHODS.

In the issue of The Michigan Farmer of July 31st, we note the suggestion of the editor in regard to the exchange of ideas and systems among the different clubs. It seems to the writer that the plan is a very good one. Any one who makes it a point to study the local reports as they appear in this department will very readily admit that there are divers ways of conducting a successful club meeting.

The Maple River Farmers' Club was organized ten years ago last April, and has been an important factor in local rural life ever since. It has, of course, the regular constitution and by-laws of any well organized society. The original membership was restricted to sixteen families, but has been increased from time to time until the club limit is now twenty-one, and has been so for several years.

The officers are president, vice-president, secretaries and treasurer. They are elected in January and July, and serve six months. At the same time an executive committee is appointed by the club to have full charge of monthly programs. This committee, strictly speaking, consists of two, one preparing the gentlemen's topics and the other the ladies'. The two members of this committee work either separately or together, as they see fit.

The regular club meetings are held on the last Thursday of every month. The club has tried other days, but has concluded the fifth day is the most convenient, especially for the ladies of the society. Half-day meetings are held from April to October inclusive. The members meet directly after noon and carry out the regular program before tea time. During the remainder of the year all-day meetings are held. The members assemble in the forenoon at 11 o'clock, transact necessary business before dinner and carry out the regular program later.

In all cases refreshments are served by the host and hostess, either at ta-

bles or on lap-boards, as they see fit, or by the use of both, just as they prefer. Visitors are allowed only at the option of the household entertaining the club, although, if a member has company from a distance at the time of meeting the member is considered as having a right to bring them to the meeting as though they had been regularly invited by the host or hostess of the occasion.

Discussions are carried on in the usual manner, and are limited only by the time that can be allotted to each. The subjects that have been brought before the club embrace every practical subject. Even politics have been discussed and the club's equilibrium left undisturbed.

C. P. REYNOLDS, Cor. Sec'y.
Shiawassee Co.

REPORTS FROM LOCAL CLUBS.

SALEM FARMERS' CLUB.

The Salem Farmers' Club was entertained by Mr. and Mrs. John Munn July 7th. In the absence of the presiding officers Mrs. John Waterman, by vote, was called to preside. Owing to the very busy season we were somewhat surprised in the attendance, forty-nine doing justice to a bountiful dinner. In the literary exercises Miss Tena Packard and Mrs. Sarah Stanbro acquitted themselves most creditably in recitation and reading. The association topic, "The Agricultural College," was presented by Dr. George Waterman, of the Agricultural College of Storrs, Conn., and a graduate from the Michigan Agricultural College. The speaker opened his remarks by saying he hardly knew what to say, as he did not know how much we knew or what we wanted to know. After giving us a short talk on the work of the College, the studies taught and their relation to agriculture, the speaker spoke of what the College had done for him and ought to do for the farmers. To him it had first given his education, then his bread and butter. He was in favor of the winter vacation, as he thought it gave the student a chance to earn money to go to school in the summer. The summer season offered a better chance for practical work at the College. He thought all students should be compelled to work. To the farmers: First, there must be harmony between the College and the farmers of the State. The farmers must support the College and the College must work to help the farmer and elevate the agricultural profession. The farmers can help the College by sending their sons and daughters there to be educated, and by seeing that the College receives proper appropriations. As a very large part of the farmers cannot go to the College the College must be taken to the farmers. It is endeavoring to do this in a number of ways. First, by its bulletins. These are carefully prepared and distributed to the farmers free. In order to derive any benefit from the bulletins the farmers must study them and endeavor to practice the principles set forth therein. The speaker thought too many of the bulletins went into the waste basket or are laid one side without being read. He said each individual farmer must not expect that every bulletin will treat of what he is especially interested in; but sooner or later one will come that will impart just the information he wishes. Another way in which the College goes to the farmers is through the Institutes. He thought in order to have these beneficial the farmers must take an interest in arranging for them, attend the county organization, take a part in the discussions and endeavor to carry out the principles brought out in the Institute. Yet again the College goes to the farmer through the Home Reading Circle, by which the farmer may receive great help in self-education. He thought the time had passed when the uneducated farmer can be a success.

Some time was spent by the members asking the speaker questions, which were gladly answered to the satisfaction of all.

The president appointed as the executive committee for the next three months, Mr. Irvin Hamilton, Mrs. Mercy Withee and Mr. John Asper.

Mrs. Myron Bailey invited the club to meet at her home for the August meeting.

Washtenaw Co., Mich.

UTILE DULCI FARMERS' CLUB.

The July meeting of the Utile Dulci Club was held at the home of Mr. and Mrs. N. A. Clapp. Although it occurred at the most busy season of the year there was a large attendance. The meeting was called to order by the president, A. H. Bidwell.

After the usual preliminary and literary exercises the Agricultural College question was taken up. The discussion was opened by N. A. Clapp, who gave a brief outline of what the character of the work taken at the College was, and the objects sought to be obtained, emphasizing the fact that some times the scientific courses, notably chemistry, botany and entomology, were given the lead, and practical instruction in matters pertaining to ordinary farm operations neglected. That the College had attained an enviable reputation among kindred institutions, and a large percentage of those who had finished the course were holding eminent positions as instructors in other colleges, or responsible positions among the professions. The statements made brought out a lively discussion.

David Gage said that if the College was not fulfilling the purposes for which it was established it was very evident that there was something wrong, and that immediate efforts should be made to have the errors corrected. That while it may not be accomplishing just all that we had hoped would be accomplished, he believed that it was yet worthy of encouragement and support. He was not one to decry and condemn the College simply because it had faults.

A. H. Bidwell stated that the College had been both overestimated and underestimated; that some seemed to believe that nothing worth knowing could be learned anywhere else; while others claimed that it was not worth one's time to spend four years in a course there for all that could be learned there; that he had looked the matter over and had come to the conclusion that much good was likely to come from the College yet.

At the close of the discussion a resolution was passed declaring the College worthy of our encouragement and support.

The question, Which wields the greater influence, heredity or environment, was opened by Mr. David Wilson, who said that the question was too large and comprehensive for him to discuss in so short a time, and embraced too much for him to unravel, but after some very good points were made he concluded that heredity was the more potent factor in shaping the character of plant, animal or man.

The subject was discussed by several members but none seemed willing to draw a definite conclusion.

During recess the president, Mr. Bidwell, exhibited some grasses in different stages of development from the pure June grass up to genuine Quack grass, contending that under certain conditions Quack grass could be produced from June grass. The matter brought out some pertinent remarks from the unbelieving Thomases, some declaring that they would as soon believe that man descended from a monkey as to believe that one species was the parent of another.

Mr. Gage suggested that it was a credit to man to ascend from a lower being, but a discredit to degenerate from a perfect man to a dissolute being, and as far as he was concerned he would much rather his great grandfathers should be monkeys than to be a monkey himself.

Miss Carrie Brown recited "Parson Lamb's Donation."

Mrs. Will Wilson read an excellent essay on "Kitchen Economy."

Miss Carrie Wolfe, a gifted and accomplished elocutionist, was present and gave a recitation.

The club adjourned to meet for their annual picnic August 18th.

N. A. CLAPP, Cor. Sec'y.

WASHINGTON FARMERS' CLUB.

The July meeting of the Washington Farmers' Club was held at the home of Mr. and Mrs. Milo Newberry, near Rochester. President Lawson helped to make the dinner hour a pronounced success by furnishing a generous supply of luscious strawberries. After the usual opening exercises the program of the afternoon was opened by a paper by J. J. Snook. His subject was "What Three Evils Are Most Responsible for the Present Hard Times?"

He said the subject implied that the times are hard. Everybody says they are hard, and what everybody says and most people feel must be true. He asked why, with corn cribs full and overflowing, markets loaded, clothing institutions packed, implements and general merchandise in great abundance, and prices reasonably cheap, we should call the times hard? He said everything was plentiful enough but the one thing which our civilization has made necessary, money. He said money has been manipulated and curtailed by

law in the interest of the professional financier and to the detriment of all honest business, especially to agriculture. He said the principal reason for stagnation in business and hard times lay in the fact that silver had been taken from our monetary standard, thereby making the price of everything conform to a contracted, cornered single standard, except such prices as are sustained and fixed by trusts, combines and associations.

He said the second great evil or cause for hard times was the existence of these various combines, which destroy competition and the natural law of supply and demand.

He said the third great injury to our prosperity is the sending away of so much of our limited money supply for products and manufactures that we could produce at home.

The paper produced a lively discussion.

Milo Newberry said it wasn't the demonetization of silver so much as it was that we were living too extravagantly. He referred to the prosperous times of the past twenty years, which have built up our cities and towns and farming communities.

P. P. Warren spoke of old times when we had hard prices. He said money was plentiful enough but there was lack of confidence.

John M. Norton said monopolies and rings have taken our money; that the prices of products have been shrinking ever since 1873.

C. E. Crissman thought that waste led to want. That the enormous amount of time, energy and money wasted by the American people through their intemperance was one of the most fruitful sources of the present hard times.

Mr. Lawson thought we ought not look upon the times as hard. It takes money to sustain our advanced civilization and make life worth living.

Mrs. Arthur Newberry read an excellent paper on "The Requisites for a Model Housekeeper." Among the many good things in it she said we wage war against dust too much and return to dust too soon. She thought no home could in any way approach a model home where love did not reign.

C. E. Crissman introduced the State topic by reading some extracts of articles written for The Farmer by President Snyder and Prof. Smith on the work, management and future prospects of the Michigan Agricultural College.

Remarks were made by Hon. Joseph Holman, who spoke highly in favor of the College and its value to the State. He said we pay to educate lawyers, doctors and professional men, why not to educate our farmers?

The last paper on the program was a literary treat by Mrs. Fox, entitled "The Secret of True Gentility."

She spoke of the selfishness which predominated among would-be gentlemen and ladies. The world never knows how much higher they might rise if courteous. Politeness must be taught the child at an early age. The power to say pleasant things ought to be cultivated. We should cultivate a more sympathetic spirit in our homes. She said let us begin the kindergarten with cultivating the heart.

The paper was freely discussed, some thinking the world was growing better, some worse.

The meeting adjourned to meet at Baker's Grove, near Washington, on Wednesday, August 11th, for our third annual picnic with West Avon, South Avon and Chesterfield Farmers' Clubs.

C. E. C., Cor. Sec'y.

Macomb Co.

RAISINVILLE AND IDA FARMERS' CLUB.

The Raisinville and Ida Farmers' Club met July 30th at the home of Mr. and Mrs. Sam McPetridge, at Ida. Though a busy season, there was a large attendance. After the minutes of previous meeting were read the Club question, "What Is the Ratio of Failures Among Farmers to Men of Other Callings?" was opened by Mr. John Nichols, who thought there were few failures among farmers. Those who lost their farms on a mortgage, never having had them paid for, did not make a failure, for the farm was not theirs to lose. But he did not know of any statistics that one could find out the ratio.

The question was then discussed by different members.

Mrs. E. L. Lockwood thought why so few failed on the farm was on account of the help farmers had from their wives.

"The Agricultural College" was not fully discussed on account of its being

REPORTER.

the Association question for next month.

"The Chief Element of Success of our Best Local Club Meetings?" The president called on Mrs. Brown, president of the Deerfield Club, who thought the question box proved a success in their meetings.

Some thought the more that took part in the discussion of the topics made it more interesting. But the general opinion seemed to be the dinner and sociability.

Miss Josie Woodruff, of Detroit, gave an excellent recitation.

Music was furnished by Mr. Schaffer.

After supper the club adjourned to meet August 27th at Mr. John Barnaby's, with the questions: "Is Labor Necessary for the Highest Development of Character?" Leader, Mr. Sam McPetridge. "What Can Farmers' Wives and Daughters Do Toward Making the Farm Pay?" Leader, Mrs. John Nichols. Also the Association question, "The Agricultural College."

MERTIE KRING, Cor. Sec'y.

Monroe Co.

SOUTH JACKSON FARMERS' CLUB.

Mr. S. L. Loud is the fortunate possessor of a grove and on July 31 he entertained the South Jackson Farmers' Club in the aforesaid grove. The day was an ideal one for an outdoor meeting, just a trifle too perfect, in fact, for the recent wet weather had made the farmers anxious to secure their crops and as a result the attendance was not as large as usual.

President Hammond called the meeting to order and after singing by the club and prayer by Rev. Mr. Morrison the secretary read an invitation for the club to join the Jackson Typographical Union on an excursion to Detroit on August 3. After the usual discussion of miscellaneous business the club adjourned for dinner.

Mr. Robert Tygh was expected to open the topic for discussion, "What is the Chief Element of Success in Our Most Successful Club Meetings?" but, as he was absent, the president called upon Mrs. Ford, who thinks a willingness to work the chief element. Every member should feel an interest in the club and its welfare, take the trouble to think upon the topics for discussion and not reply, when called upon for a few remarks, "Oh, please excuse me. I'm not prepared!" Several members were here observed to look very thoughtful.

Mr. John Neely thinks the most successful meetings are those in which we become a little excited and say just what we think regardless of effect.

Mrs. Wm. Hutchins thinks attention a very important element. Nothing is more embarrassing to a speaker than an inattentive audience.

Mr. Pellet thinks we should be thoroughly interested in our work. If we are interested in a subject we can talk about it. Nothing is more helpful than a cordial exchange of ideas among those who have a sincere desire to help one another.

Mr. D. H. Goldsmith jokingly remarked that the good dinners for which South Jackson is famous are an important item. But a variety of subjects is also important. All of us cannot talk well upon all subjects and the program committee should see that a variety is furnished. Their duties are very important. The committee mentioned discovered it was their turn to look thoughtful.

Miss Celia Hatch mentioned four elements of success: Interest, attention, energy and determination.

Mr. Jones, being called upon, said that the success of any organization depends upon the officers. They should be present at every meeting and be thoroughly familiar with the topics for discussion. They should be prepared at any time, in case of the absence of a speaker, to take his place without embarrassment or hesitation. And here the officers gazed into vacancy with a solemn cast of countenance.

Mr. Ayres and President H. each made a few remarks in the interest of harmony and mutual helpfulness and then the report of the viewing committee was called for. Mr. Loud's farm of 361 1-2 acres is finely located in Summit township and contains many fine springs and beautiful groves. The fences and buildings are in excellent condition and the farm both productive and profitable. Mr. Loud makes quite a specialty of celery, and the celery house and the springs were objects of great interest, particularly to the younger element of the club and to the visitors.

The next meeting will be held at the residence of Rev. and Mrs. Morrison, August 28. The topics for discussion will be "How to Pay the Mortgage on

the Farm?" to be opened by D. H. Goldsmith, and "Which is the Greater Responsibility for the Parents—the training of the boys or of the girls?" Mrs. Wm. Hutchins will discuss it from the standpoint of the boys and Mrs. Richard Crouch from that of the girls.

And thus ended a pleasant day.
HELEN M. CARPENTER,
Reporter.
JACKSON CO., MICH.
EAST BLACKMAN AND WEST LEONI FARMERS' CLUB.

The June meeting of the East Blackman and West Leoni Farmers' Club was held at the home of Mr. and Mrs. Chanter with a fair attendance. Aside from the opening exercises, readings and recitations, Mr. Daniels, of Sandstone, introduced the tariff question, speaking especially of wool. This brought out a lively discussion from the members present.

The question box produced a number of interesting questions among which was the following: "If persons join the club are they obliged to take part in the literary exercises or to entertain the club?" The answer was: "Not necessarily, although all contributions to the literary departments are thankfully received. In regard to entertaining the club there are usually a number of standing invitations so that trouble is never experienced in finding a place for the next meeting."

The club adjourned to meet with Mr. and Mrs. Dalton, of West Leoni, on the third Thursday in July. It is to be hoped that all members will be present. An excellent program has been prepared and business will be transacted.

ASSISTANT CLUB REPORTER.

JACKSON CO., MICH.

CHEESE MAKING ON THE FARM.

Occasionally we receive an inquiry from the owner of a few cows as to how one can make cheese at home. The following from an Ohio correspondent, Mr. Newell, who is a veteran and expert cheese maker, will prove interesting:

The vat should be large enough to hold the milk in the flush of yield. Do not use home-prepared rennet or coloring, but buy the best commercial article. Do not make the common mistake of adding the rennet before the milk gets acid. Inexperienced makers are apt to use immature milk, scald the curd too high, draw the whey before it is properly cooked, and salt by guess.

We will suppose that you are making cheese in the summer, the season in which the bulk of the product is manufactured, and you aim to make a tip-top article. Strain the night's milk into the vat you are to use the following day, draining through a double thickness of finely woven cloth. Aerate the milk by careful stirring, and if you have water to run about it, so much the better, but be sure to aerate it. This will expel the animal odor and reduce the temperature. Unless the night should be exceedingly close and warm the milk will be better off without ice than with it. You see, you want to insure a certain degree of ripeness or acidity for the morrow, and yet have the milk keep well. At the beginning of the next day strain in the morning's milk, and stir the whole batch thoroughly together. This stirring will not thoroughly incorporate into the fluid the thick cream which will have risen during the night, so skim this off in a dipper, and re-strain through an open cloth strainer suspended above the vat.

While you are working the cream back into the milk, the heat which should have been previously applied will be slowly warming up the vat of fluid till its temperature stands, by the thermometer, at 84 degrees. If you have reason to believe from the coolness of the weather or any other cause, that the milk is not properly ripe, you should hold it at this temperature for a half-hour or so before applying the rennet. The setting temperature should be 84 degrees in summer, and 86 degrees in the spring and fall. If you are making colored cheese apply the color a few minutes previous to application of rennet, and thoroughly incorporate the annatto into the milk by gentle stirring. Put in enough rennet to make the milk "come" or coagulate in twelve or fifteen minutes. Use a time-piece in this matter. Let the coagulated milk stand till it thickens sufficiently to split cleanly apart before the finger when that member is thrust into it. This will usually be in about 45 minutes after application of rennet. Then proceed to cut it lengthwise with the horizontal curd

knife (a tool with which you should be supplied) and then crosswise with a knife set with perpendicular blades. Again cut it lengthwise with the perpendicular knife, and unless the milk is sour and working fast this will be sufficient.

Let the raw curd stand a few moments before application of heat, and then slowly raise the temperature to 98 degrees, stirring carefully at frequent intervals to keep the curd loose, and insure an even cook. In early spring it may sometimes be necessary to raise the temperature above 98 degrees, but it must be borne in mind that a greater degree of heat than this is liable to destroy the life of the rennet. When the curd has stood at 98 degrees long enough to become of rubber consistency, a double handful falling loosely apart on the palm when squeezed dry of whey and into a ball, it is cooked enough. If you intend to use a mill, at this stage draw off the whey and pack up the curd, keeping it warm till it develops acid. If you are going to make without a mill, hold the curd in the whey till a slight degree of acid is developed, and then draw off the whey, stirring the curd to keep it loose.

When you have the curd in a packed or loose state, with or without a mill, salt it when enough acid has developed for a piece of the curd pressed against a hot iron to pull out strings half an inch in length. Stir the salt thoroughly into the curd at the rate of 2 1/4 to 2 1/2 lbs. of salt to 1,000 lbs. of milk. Put the curd to press at a temperature of about 70 degrees. Cure the cheese in a room with an even temperature of from 65 to 70 degrees. Keep both ends of the cheese greased well, and turn and rub every day.

RECAPITULATION.

Start out with a complete equipment in the utensil line. Aerate the milk in expelling the animal heat. Work all of the cream into the milk; do not skim some of it off and make butter. Mature the milk before applying the rennet. Use the purest rennet extract and color extant. Use a thermometer which has been tested, and that you know is reliable. Exercise care in cutting and handling the raw curd. Cook the curd thoroughly, but do not use an extremely high temperature to do it. Under any condition do not let the curd develop but little acid in the whey. Employ a cloth cover to place over the vat to hold the heat. Salt the curd when it will pull fine strings half an inch in length from a hot iron. Use salt that is fine, and chemically pure. Do not put the curd to press too hot or too cold.

Bear in mind that with a small quantity of milk you must modify your work to its limited amount, but that you must cling to the main principles we have outlined. Exigencies will arise which you are not looking for, and to surmount them you must call to your aid reason and judgment. Experience means a great deal in successful cheese-making, so do not be discouraged if you have ill-luck on the start.

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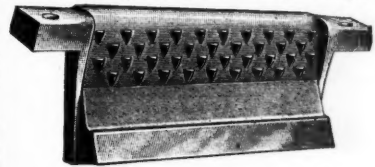
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Tearing Fodder in Shreds.—One of the inventions for 1897, made in behalf of farmers, stockmen and dairymen, is an improved shredding attachment for feed cutters. The attachment is made more especially to be used in connection with Heebner's Union Feed and Ensilage Cutter, made by Heebner & Sons, Landsdale, Pa., U. S. A., and can be furnished for all their late model machines. The illustration will show how simple



and inexpensive the attachment is. It is claimed, too, that the work of shredding can be done with much less power, when this attachment is used, than with any other shredder. The rounded surface on top of the shredder bar admits of the roller being bent over and forced down upon the rasp-like surface beneath, causing the fodder, the knives pass over it, to be bruised and torn into shreds of from three to six inches in length. The cutting edge beneath the rasp-like surface prevents all winding or wrapping about the cylinder, a fault so common in other shredders.

All persons interested in feed and ensilage cutters will do well to make application for free catalogue. Much valuable information relative to the cutting of green corn for ensilage, the preparation of cured fodder for bedding and feeding, etc., may be had for the asking. Heebner's Feed and Ensilage Cutters are not superior but they are equal to Heebner's Level-Tread Horse Powers and Little Giant Thrashers. Address Heebner & Sons, Landsdale, Pa., U. S. A.

THE GASOLINE ENGINE.

The development of the gasoline engine has been watched by many with the greatest interest, for it early promised to be an ideal power. Even if this engine did not effect a material saving in expense, the doing away with the use of coal and wood, with the ashes and dirt, which is a necessity where they are employed as fuel, would be sufficient of an advantage to extend their use and render them popular.

With the gasoline engine the fuel is piped directly to it and an ample supply is always at hand. In about a minute after the gasoline is turned on, the engine is running and developing full power. To stop it means but to turn off the gasoline. The facility with which the engines may be started and stopped makes it unnecessary to run them when the power is not actually required. What could be quicker or more convenient than this? Full power any minute you want it, no expense when not in use, no smoke, no dirt, no odor. Furthermore, the engine once started will take care of itself; it needs no attention beyond seeing that the oil cups are filled. The make of engines from which our illustration is taken, are all self-regulating; that is, the quantity of fuel consumed depends altogether on the load on the engine. If you have a fifty-horse-power engine and the work it is doing requires only thirty-horse-power, the engine will take only enough gasoline to do the work in hand, and if the load is increased or diminished, as the case may be, and only when the engine is carrying full load will the maximum quantity of fuel be used. The starting, stopping and regulation of this engine is so simple that any one can in a very short time, become thoroughly familiar with all the details.

While the great advantages of the gasoline engine were at once recognized, it was at first regarded as a somewhat dangerous, unreliable and expensive power, which, of course, retarded its introduction into general use, but the freedom from accidents, and the advance made in economy or fuel consumption, have demonstrated that they are as safe as well as a cheap power.

Although gas and gasoline engines have been on the market many years, their use, until a few years ago, was confined almost entirely to the smaller sizes, but the economy and success with which these small engines were operated, stimulated efforts to produce larger sizes, and now the users of power can avail themselves of this most desirable form in sizes that will answer nearly all demands. We wish to especially call the attention of farmers to the advantages of using one of these engines, which can be furnished on trucks, and in this form can be removed from place to place about the farm. Mr. E. K. Butler, of the McCormick Harvesting Machine Company, purchased one of these engines, and was so pleased with it that he wrote the following to the manufacturers: "The gasoline engine you mounted on trucks for me, for use on my farm, has proven itself to be one of the most useful tools upon the place. It seems to be well adapted for running a corn husker and shredder, corn sheller, grinder for fringing corn, cob and all, or shelled corn; for running a small threshing machine, cream separator or sawing wood. It seems to regulate itself perfectly for any amount of power required, from the lightest work up to its fullest limit. The compact manner in which the water coolers and engines are mounted upon trucks, the ease and convenience in moving from place to place as desired to be used upon the farm, together with the fact of its being capable of almost running itself when once set in motion will, I believe, make it within the near future almost one of the necessities for every good, thrifty farmer." The engines referred to above were built by Fairbanks, Morse & Co., of Chicago, who make a specially fine engine, fitted up in the neatest and most complete style. If you are thinking of using this power, write this firm for catalogue.

Boys in Blue Will Want to See You at Island Lake August 15.

That will be the "big Sunday" in camp and we know you want to visit the boys and enjoy the attractions there. The D. G. R. & W. R. R. will run special trains leaving Detroit at 8:30 and 10:00 a. m. Leave the Lake at 7:00 and 7:30 p. m. Round trip rate 50 cents.

GEO. DEHAVEN, G. P. A.

THE MICHIGAN FARMER

State Journal of Agriculture.

THE LAWRENCE PUBLISHING CO.,
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DETROIT, SATURDAY AUGUST 14, 1897.

This paper is entered at the Detroit Postoffice as second class matter.



A REVIEW OF OUR EXCURSION.

As this is about the last issue in which anything can be said about our First Annual Excursion, we wish to add a little information to that already given, and urge upon our friends and subscribers to send in at once if they intend going, in order to secure good staterooms, as they are now going very fast. We have the assurance of one of the finest lake excursions ever taken, which will be made up almost entirely of our subscribers and their friends. This will give them all an excellent opportunity to become acquainted this year, so that when we start on our trip again next year it will be like a large family party. There will be in the party, besides proprietors and editors of this paper, many of the best writers on all agricultural and live stock subjects in the State, many of whom you all know through reading their articles in this paper. There will also be many of the officers and faculty of the State Agricultural College, many officers and members of the Patrons of Husbandry and of the Farmers' Clubs, so that all will be sure to meet many old friends and form acquaintances which will bring back pleasant memories to them. The trip is said by every one who has taken it to be the very finest on the lakes, and we have secured a very low rate, within the reach of all, from the D. & C. Steam Navigation Co. We take this trip on one of the largest and newest of their five handsome lake palaces, the steamer City of Mackinac, which will leave Detroit on Monday, Aug. 23d., at 11 p. m., passing up the Detroit river past Belle Isle, the handsomest city park in the world, then across Lake St. Clair, through the famous government ship canal into the St. Clair River, passing the St. Clair Flats with its large number of club houses and cottages, most of them being built on stilts or made ground, from which the Flats get their name of the "Venice of America." You then pass on up the river past Algonac,

making a short stop at St. Clair, thence to Port Huron, right at the entrance to Lake Huron, where we arrive at 7 a. m., and after a short stop continue on to Sand Beach, one of the prettiest summer resorts on the lakes, arriving there at 11:30 a. m. Thence on through Lake Huron to Oscoda, where we arrive at 3:30 p. m.; thence to Alpena, the largest city on the lake, and a most important lumber center. We arrive there at 6:45 p. m. and stay one hour and a half, and leave again at 8:15 p. m. This will give all time to get off the boat and look around the city. We then continue on past Cheboygan, and arrive at Mackinac Island at 5:45 a. m. the next morning. This is one of the most renowned islands in the lakes, and we need not say much about it here, as it is so well known. Among the points of interest are old Fort Mackinac, the old John J. Astor House, which was the headquarters of the American Fur Company many years ago. There are a great many very curious and oddly shaped rocks all over the island, which interest everyone who goes there. Among them are Lover's Leap, Devil's Kitchen, Leaning Rock, Arch Rock, Sugar Loaf Rock, Chimney Rock, Scull Cave, Fairy Arch, Pulpit Rock, Scott's Cave, Giant's Staircase, and many others.

Those who return on the same boat will leave the island at 8:30 a. m., arriving in Detroit the next day, Thursday, at 8:30 a. m. On the way back you will pass in the daytime the places you missed seeing while going up. Those who wish, however, can stay over one day until the next boat, which leaves the island at 3 p. m. on Thursday, which will give you really two days there. This is the last boat tickets will be good on, however.

The hotel accommodations are as good as any one would wish for, and a person can get a rate of from \$2 a day and upwards, according to the accommodations required. Those that stay over will arrive back in Detroit at 3:30 p. m. Friday, after seeing sights which will never be forgotten, and having four days and four nights on the City of Mackinac, one of the finest boats on the lakes. The meals on these boats are everything that money can make them, and they are included in the cost of ticket, as well as the berths and all other expenses while on the boat. Write at once for rates and full particulars, as berths must be secured in advance. Some, of course, are more desirably located than others, and first applicants will have their choice.

The boat will leave promptly on time from the D. & C. docks, foot of Wayne street, Detroit. Remember the directions to dock. The rate we have secured is for the trip, including berths and meals while on boat from Detroit and return, and we can not secure any different rate from any other points. The railroads will all give a special rate to Detroit and return, where a party of ten go from the same station. We will notify those deciding to go where to meet a party nearest to their station in order to have at least ten there. Those arriving in Detroit during the daytime we will be very glad to have call on us in our new offices on the fourth floor of the new Case Building, Nos. 39 to 45 West Congress street, near Griswold street. Write at once for terms or you will be too late. All who can should come. It is not necessary to be a subscriber to go. Anyone can go.

The reports of yields of Dawson's Golden Chaff show this fine wheat to be a great acquisition. We have several reports of yields running from 38

to 43 bushels per acre. The grain is also of high quality. Prof. Kedzie, of the Agricultural College, is entitled to the credit of introducing this wheat into the State, and his statements regarding its merits were not at all exaggerated.

THIS IS MUCH BETTER.

The condition of the wool market as compared with a year ago is certainly very gratifying to those interested in the sheep industry. We have been looking up and comparing the prices ruling a year ago with present quotations, and the result is so remarkable that we summarize them in a tabular statement:

	1896	1897
Fine delaine Ohio and Pennsylvania.....	19@20	24@25
Fine delaine Michigan and Wisconsin.....	18@19	22@24
No. 1 combing $\frac{3}{8}$ and $\frac{1}{2}$ blood.....	20@	23@24
No. 2 combing, $\frac{1}{2}$ -blood.....	20@	23@24
Coarse combing, braid.....	20@	20@21
Ohio, Pennsylvania and West Virginia xx and above.....	17@19	23@25
Ohio, Pennsylvania and West Virginia No. 1.....	19@20	24@25
Ohio, Pennsylvania and West Virginia No. 2.....	19@20	24@25
Ohio, Pennsylvania and West Virginia coarse.....	19@20	20@21
Michigan, Wisconsin and New York x and above.....	15@	19@20
Michigan, Wisconsin and New York No. 1.....	18@	22@
Michigan, Wisconsin and New York No. 2.....	19@	22@
Michigan, Wisconsin and New York coarse.....	19@	19@21
Ohio and Pennsylvania fine unmerchanted.....	13@14	17@18
Michigan and New York fine unmerchanted.....	11@12	15@16 $\frac{1}{2}$
Ohio and Pennsylvania fine unwashed.....	11@12	16@17
Michigan and New York fine unwashed.....	10@11	14@15
Half-blood unwashed.....	14@	17@18

The difference on fine wools is from 4 to 5 cents, on half blood 2 to 3 cents, and on coarse from 1 to 2 cents. This advance, it must be remembered, has taken place in the face of the largest importations ever known, and while the stocks on hand are considered sufficient to supply manufacturers for the next six months. However, this wool will all have gone into consumption by the time the next clip is ready for the market, and then, if not before, we shall expect a further advance until the limit of the new duties is reached. We place the actual duty on wool of the first and second classes at 8 cents, although nominally 11 and 12 cents, because these wools will all be brought in "skirted." The result will be, if foreign markets do not decline, that Michigan X wool will be worth in the Boston market next spring from 23 to 24 cents, Michigan delaine 26 to 28 cents, Michigan fine unwashed 17 to 18 cents, and half-blood unwashed 20 to 21 cents. If these prices are reached wool-growing must again become a very profitable business in connection with the production of mutton. We look for the price of mutton to be well sustained, for the remunerative prices for wool will assuredly lead to the increase of flocks by the retention of a much greater number of the young ewes, which will be reflected in the market by the greater value of those sold for mutton. All breeds will participate in the improvement, and while braid, or coarse long wools, have not improved to the extent of other grades, they will do better relatively in the future, when present supplies have been worked up. The prospects are certainly flattering for the sheep industry.

One of the events of the past week was the assassination of Senor Canovas del Castillo, the Spanish Prime Minister, by an anarchist named Golli. The crime has caused a great sensation in Europe, and is expected to have an important influence upon Spanish affairs. Some Americans appear to think it will result in the independence of Cuba, through the Spanish people becoming weary of the struggle, and home affairs claiming greater attention. Others think a revolution immi-

nent, or, at least, that the Conservative party will be displaced in the government by the Republicans. We do not believe that the assassination will result in any change of parties or policy on the part of Spain. On the contrary, it will assuredly tend to unify the people and cause them to support their government with greater loyalty. A public calamity like the assassination of Premier Canovas, instead of weakening the government, will strengthen it. This has always been the case, and always will be. The petty grievances of individuals will be forgotten in the presence of such a calamity, and we predict the people of Spain can be relied upon to support their government with much greater unanimity and devotion than before the occurrence. The crime itself was a dastardly and useless one, and will put every European government in sympathy with Spain, and enable them to unify public sentiment in the adoption of measures for the stamping out of anarchy, which appears to be simply a milder term for cowardly murders and assassinations.

SUGGESTION TO FAIR MANAGERS.

To the Editor Michigan Farmer:

I desire through your columns to transmit to the people of the State a resolution which was passed by the American Association of Farmers' Institute Managers at their meeting in Chicago last October. The spirit of the resolution applies to all fairs, and I hope that the sentiment of the farmers of the State will be so clearly manifested that fair managers will find it profitable to acquiesce in the sentiment expressed in this resolution. The resolution follows.

Yours truly,

KENYON L. BUTTERFIELD,
Supt. Farmers' Institutes.

"Resolved, That this association hereby most heartily commends all fair boards that have driven all immoral, gambling and other questionable devices from their fair grounds, and do now most earnestly request such boards as have not done so to shut out all such questionable devices in the future."

PROSPECTS ARE GOOD.

EVERY INDICATION SPEAKS THUS OF THE STATE FAIR.

There is every indication that the State Fair is to be a success this year. Secretary Fralick wrote to Superintendent Fifield yesterday, telling him that the inquiries for premium lists and other matters pertaining to the fair were more numerous up to the present time than they were last year. The secretary gave this as conclusive evidence that the fair is to be a great success. Yesterday the secretary received a letter from E. A. Martin, of Newark, Delaware, superintendent of the Belmont farm, asking for 300 entry blanks for the Michigan State Fair. He will come from the Ohio State Fair, here. As a special attraction, a contract has been made with the owners of "Bicycle Johnny," the pacing wonder that goes without reins or driver. He has a record of 2:12 $\frac{1}{2}$ on a half-mile track. This horse will go around the track each day of the Fair.—Grand Rapids Democrat.

The Carter Wire Fence Co., of Mt. Sterling, O., in a letter reporting the result of their advertising for the past year, say of business prospects: "Our business this spring and summer has been exceedingly good, and it is getting better all the time as confidence is restored. As things progress in Washington, and as the tariff bill has passed, and there is plenty of money times are rapidly getting better. It is felt everywhere. We are glad to say that we are unable to fill the orders for fence machines as fast as they come in."

We have received the very neat premium list for the 47th fair of the Hillsdale County Agricultural Society. It is complete, and gives promise that the coming annual fair will be the equal of its predecessors, and a credit to its management. The secretary is C. W. Terwilliger, of Hillsdale.

Grange Department.

Our Motto:—"The farmer is of more consequence than the farm, and should be first improved."

Address all correspondence for this department to

KENYON L. BUTTERFIELD,
AGRICULTURAL COLLEGE, - - MICH.

News from Michigan Granges is especially solicited.

AN UNUSUAL OPPORTUNITY.

"Farmers take too few vacations." Such is the charge, and it is made with some truth. This season there is little excuse for not having a little resting spell. There are many picnics among Granges, there will be excursions to the Agricultural College on Aug. 17 from Battle Creek and intervening stations; Aug. 19, from Plymouth and stations in one direction, and from Greenville, Ionia, etc., from the other direction; Aug. 20, from Holland, Grand Rapids, Lake Odessa, etc. Aug. 18 is farmers' day at Bay View. And crown of all, is the "Michigan Farmer" excursion to Mackinac Island, which leaves Detroit Monday evening, Aug. 23.

This trip is without question one of the finest on the continent. The editor of this department has been over the route once, and portions of it numerous times. The trip cannot be excelled. The rates are extremely low, and we hope many Patrons will decide to take advantage of this splendid opportunity for a fine trip and an unusual opportunity for a social time and a pleasant vacation.

EDUCATION AND LABOR.

The Massachusetts bureau of statistics of labor is making a very elaborate investigation of wages of working men the country over, and in many foreign countries. A portion of this work has been put in printed form for the public. It shows that in Massachusetts the wages are higher than in any other State in the Union and foreign countries from which reports were received. A probable explanation why wages are higher in New England than in the South is made by Dr. William T. Harris, United States Commissioner of Education. He says:

"I find by returns made to the national bureau of education that the total amount of school education that each inhabitant of Massachusetts is receiving on an average . . . is nearly seven years of 200 days each, while the average given each citizen in the whole nation is only four and three-tenths of such years. No other state is giving so much education to its people as Massachusetts, and yet all the education given in all its institutions does not amount on an average to so much as seven-eighths of an elementary education of eight years. Even Massachusetts is not overeducating the people. But there would seem to be some connection between the fact that while her citizens get nearly twice the national average amount of education, her wealth-producing power, as compared with other States, stands in almost the same ratio—namely (in 1885); at 73 cents per day for each man, woman and child, while the average for the whole nation was only 40 cents."

GRANGE NEWS.

BOARDMAN VALLEY GRANGE, NO. 664.

The topic for general discussion at the last meeting was "Gladstone." It was thought his success was due to his strict integrity, his devotion to the cause of the common people, his advocacy of peace under nearly all circumstances, his pure moral life. Taking into consideration his honorable and useful life, his nearly full possession of all faculties of mind and body to such an advanced age, the high esteem with which he is regarded at home and abroad, we believe him to be the greatest living man of the day.

D. P. ROSENBERG, Lecturer.
Kalkaska County.

South Boston Grange holds regular meetings every two weeks, and although the season has been a very

warm and busy one, the attendance has been large and the interest in the Grange work has not diminished. The exercises Memorial Day were held at the hall, and a patriotic program was given in July. A paper by Mrs. C. Farnham on the "Origin of the American flag" was worth listening to. The last meeting was on "Temperance."

IDA E. ENGLISH, Cor.

Ionia Co.

MONITOR GRANGE NO. 553.

Bizz, bum bee!

Who are we?

Monitor Grange

Five fifty-three!

Monitor Grange is enjoying a little boom at present. At our last meeting, July 27th, we instructed a class of four in the third and fourth degrees, and received one application for membership. All enjoyed a liberal allowance of ice cream after degree work. We expect many more applications between now and next spring. We have inaugurated a feeling of inquiry and investigation among those who do not belong, and by this we expect results.

MRS. JENNIE MUSCOTT, Cor.

SOUTH BOSTON.

Gratiot Co. CLEARWATER GRANGE NO. 674.

Brother J. G. Getty, Secretary of Clearwater Grange, No. 674, made his annual report before the meeting of Kalkaska County Pomona Grange. The Grange has not increased rapidly in membership during the year, although several of the old members have been reinstated, and have expressed themselves as determined to stand by the Grange in the future. We can count on them. The attendance at the Grange has increased during the year.

Clearwater Grange has the only hall in Kalkaska County, and it now belongs entirely to the Grange, and is free from incumbrance. It is insured for \$400. The Grange has a surplus in the treasury, and, in every respect, is in good financial condition. The Grange hall has become the social center of all the country about, and the assemblages are so large that even the good-sized hall can oftentimes not accommodate the people. Not very long ago it was predicted that there would neither be any Grange hall or any Clearwater Grange, but we are in good working order, and our prospects are bright.

Kalkaska Co.

LENAWEE COUNTY POMONA GRANGE.

This Grange met with Tipton Grange on the first Thursday in August. After the routine business was finished, the following program was carried out. After opening exercises, "Jim" was rendered by Mrs. Julia A. Reed, who proved to the satisfaction of all that "a little nonsense now and then is relished by the best of men" (and women, too).

A paper by Smith N. Munger was entitled "Why Should Farmers Organize?" and was very ably treated. While the farmer may not be more at the mercy of the combines than are most other people, it was shown that in some respects, nine organizations are combined, any one of which is in position to influence congress, and that the combined financial ability, which is probably not less than a billion dollars, is under the guiding spirit of the Standard Oil Company. The speaker thought the nation needed the off-setting influence of a people working in harmony for general good.

A selection by Mrs. E. A. Taylor was entitled "Are the Gates Properly Guarded?"

Bro. Warren G. Shepherd discussed the subject of "Grange Influence," which gives the farmer and the farmer's wife and children the advantages of social relationship, which was not known a generation ago. He advised all to join a trust, the oldest one in existence, organized by Moses, or before, and Trust in God.

The subjects of Mutual Grange Insurance and Grange Leaflets were discussed, also the great Baw Beese picnic at Hillsdale, August 18.

The program was interspersed with fine music by Tipton Grange Orchestra, Ada Beebe, Ethel Hampton, Annie Darling, Lina Allen, Clyde Smith.

Prof. B. P. Thomas rendered "Sing Again that Sweet Refrain."

There was a goodly audience, with twelve Granges represented.

E. W. A.

NEXT KENT POMONA.

Kent Pomona Grange will hold its next two days' session with Courtland Grange on Wednesday and Thursday, Sept. 1 and 2. It has been some time since we have visited Courtland, and we sincerely hope every member will be present and as many fourth degree members as can come. We expect to have an instructive meeting. There will be some fine singing, good recitations, essays and a question box, besides the following program: Address

of welcome, Sister Saunders, master of Courtland Grange; response, Bro. Wm. T. Adams, master of Pomona Grange; "Why should farmers give more personal attention to country schools?" Bros. H. C. Dennison and Wm. Chambers; Sisters Martha Berry and Kate Watkins; original essay, Sister I. D. Davis; "Will the proposed one cent letter postage be any benefit to farmers?" Bros. A. R. Denise, John L. Davis, Wm. T. Adams; "What I have learned about cranberry culture," Bro. Wesley Johnson; "If farmers' wives cannot attend cooking lectures, how can they best learn of the most approved and economical ways of cooking?" Sisters Jennie Best, S. A. Laraway, Wm. T. Adams, Laura Clemons; "Does the jury system of Michigan need revising?" Bros. H. C. Hogadone, Frank Saunders, S. C. Peterson, Robert Sowerby; "A comparison of the Grange with other farmers' organizations," Bros. Will Myers, Chester Slayton, Geo. Hunting; Sisters Harmon Burch, J. B. Garwood; "Does it pay to husk corn when a farmer has a silo?" Bros. Jas. Martin, Russel J. Edison, Norton Fitch, John Cowan.

We expect to have a class in fifth degree, and urge all members of Pomona to be with us Wednesday evening. Please, brothers and sisters, come and help us. Visiting members are most cordially invited.

Wednesday afternoon session, which will begin at one o'clock sharp, will be an open one, and all farmers and their families are earnestly invited to attend. Do not forget, brothers and sisters, that we will have picnic dinner Wednesday.

MERTIE L. PRESTON, Secretary.

EMOR R. KEECH, Lecturer.

SUMMARIES OF DISCUSSIONS FROM LECTURERS' REPORTS FOR SECOND QUARTER.

APRIL TOPIC—ECONOMY ON THE FARM.

Question 1. What are we to understand by economical methods in farm work and management?

Use brain work, and run the farm on a business basis.

It is in the line of economy to make the farm surroundings cheerful and attractive, in order that a higher degree of enjoyment may be obtained.

Better tillage and better stock, with greater care for the same.

Every farmer should have his work systematized as far as possible, to save time and expense.

Little things should not be neglected. Stop raising anything when it is produced at a loss, and raise other crops or adopt better methods of production.

Farmers should buy good machinery, and take care of it. In no section of the country should grain be wasted, even if plenty and cheap. Eastern farmers should raise as much grain as possible instead of buying it.

Machinery should take the place of hand labor as much as possible.

Question 2. In what ways can we practice greater economy on the farm?

Every farmer should make a study of the condition and capacity of his farm and stock, of his financial condition and the necessities of his family, that he may make a careful estimate of what is needed to meet his obligations.

Co-operation in buying and selling, and always for cash or ready pay.

A better knowledge of the sources of fertility and plant growth, and a more judicious use of commercial fertilizers.

Produce the highest grade article at lowest possible cost, and put it on the market at the right time and in attractive form.

There should be a watchful care over the health and comfort of the family.

Buy good tools, and do repairing on the farm.

Buy nothing that can be produced on the farm.

Utilize everything, waste nothing.

Don't smoke or drink up profits; maintain constant personal supervision over your work.

MAY TOPIC—THE FARMER'S EDUCATION.

Question 1. What education is needed by farmers at the present time?

Farmers need a better knowledge of soils and plant growth, of insect pests and how to destroy them, a better knowledge of the wants of the consumer and how to meet these wants. A better understanding of the laws of trade and commerce. A definite knowledge of markets and market conditions. A better knowledge of political questions, not partisan, but those that relate to the ethics of government. A better general knowledge, and ability to talk on agricultural and other topics if necessary.

Question 2. How can farmers best

obtain the education they need?

The Grange is the best farmers' school extant, and in a general way it furnishes excellent opportunities for assisting the farmer in obtaining the practical education which he needs.

Reports and bulletins from state experiment stations and United States Department of Agriculture should be obtained and carefully studied.

By attending Farmers' Institutes and such lectures on special or general topics as may be within one's reach, agricultural papers are a direct means of imparting such education as farmers need.

Much can be learned by attending agricultural fairs and field meetings, visiting other farmers and learning from them in many ways. The education that the farmer needs to-day in order to succeed must be sought, it will never come by chance.

JUNE TOPIC—CAPITAL AND CO-OPERATION IN FARMING.

Question 1. Would the investment of larger amounts of capital in farming enterprises be of advantage to the farming interests of this country?

Because of the necessity of sending in the reports so early in the month, but few discussions of the June topic were included in the reports. From those at hand the trend of thought seems to be that farming on an extensive scale by uniting large tracts of land under one management would not be for the best interests of the people, but an increase in the circulation of capital among farmers would be very desirable.

Question 2. Should co-operation in farming be encouraged in this country?

Co-operation in farming without destroying the individuality of the farmer is desirable and should be encouraged. United, well-directed action always gives strength.

If more replies are received on this topic they will be included in the next quarterly summaries.

FOR THE BENEFIT OF LECTURERS.

SUPPLEMENTARY QUESTIONS.

Which will yield the most food, to pasture land or cut it for hay?

What is the chief element of success in grange work?

Is there any advantage in changing the name "Agricultural College" to that of "University," and if so, what is it?

Should farmers always sell the best they raise?

How can we best combat the horn fly?

Of what advantage is the Agricultural Department at Washington to the farmers of the country?

Does the silo improve the quality of the food?

Some writers claim that a lack of forest growth causes droughts; others claim that a lack of forest growth causes floods. Which is right?

How many farmers in the radius of twenty-five miles would make good representatives in Congress?

What is the cheapest and best way to cut corn and draw it in the silo?

What is a "balanced ration" for cattle?

What would be a "balanced ration" for a laboring man?

Do flowers have any influence on the inmates of the farm home?

Why should the rich man stoop so low as to become a beggar by asking the poor man to pay his taxes?

Which is most nutritious, dried grass or hay, and why?

How many laws passed by the last Legislature relate to agriculture? How many to business? How many to the professions?

Special or diversified farmers. Which and why?

Shall farmers pattern after professional men in taking a vacation?

Instructions in parliamentary law?

Are our granges conducted according to parliamentary law and usage? If not, why not?

How are our banking institutions managed?

What advantages have city banks over country banks?

What are the regulations of savings banks in this State, and what is the minimum rate of interest fixed by law?

Which is of most importance in our public schools, book knowledge or character building, and why?

What farmers in this country are doing most for the interests of agriculture, and is their work duly appreciated by other farmers?

Economy and strength are combined in Hood's Sarsaparilla. Every bottle contains 100 doses and will average to last a month.

The Household.

CONDUCTED BY MRS. ELLA E. ROCKWOOD, FLINT, MICH.

We should be pleased to have any of our readers send in their views and opinions upon any subject which is under discussion, or which they wish discussed. The invitation is general, and we hope to see it accepted by many. Address all letters for The Household to Mrs. Ella E. Rockwood, Flint, Mich.

THAT SLICE OF WARM BREAD.

Coming home from the office, its cares and its worries,
Welching me down with a burden to-night,
I thought of my care-free and frolicsome boyhood,
And how quickly the years intervening took flight:
Ah! well I remember no chain could have bound me,
As home from the schoolhouse my eager feet sped.
Would now that my dining brought such satisfaction,
As the thought of that slice of my mother's warm bread.

No business transaction, however successful,
Can give such a thrill of unalloyed bliss,
As I felt when mother with limitless kindness,
Laid that great snowy slice in my little brown fist.
No rhythmical wording can ever describe it:
Or no sweeter ambrosia the gods ever fed:
The future had need of no optimist's glasses,
While I held in my brown fist that slice of warm bread.

Oh, often when closing my desk for the evening,
Where the roar of the city drowns each homely sound;
I imagine myself at the old country homestead,
Where the daisies are sprinkling the soft grassy ground;
And I hear in the pasture the clear tinkling cowbells,
And know to the brook's limpid pools they have fled:
I am once again sitting, a little brown rascal,
Munching away at my slice of warm bread.

While under the apple trees out in the orchard,
The white calves are playing at bump with the brown,
And the birds are a-twitter preparing for night time;
Busily feeding their babies of down.
Oh, never those memories life's hurry and bustle
Can ever efface, till the grave hides my head.
No pleasures of life e'er excel or quite equal
The wealth of content in that slice of warm bread.

—The Housekeeper.

HOME CHATS WITH FARMERS' WIVES.

A HAPPY MARRIED LIFE.

A happy married life! What lovelier thing can there possibly be than this? And what is sadder than to see two human beings linked together for all their lives who are constantly chafing at their bonds, wishing and longing to be free?

Every true marriage is made in heaven. This is my firm belief. For every one there is a true mate somewhere, and when this is found both will be quick to know it. The true marriage is formed when two are thus united, making a complete, harmonious and beautiful wedded life. There should be no other kind.

But, do you say, that is too ideal?

It is an ideal to which every young man and woman should aspire when they select a life partner, yet it is a fact that future years are given little thought at such a time, the present only being considered.

The question which a young man should ask himself is, Do I love this girl well enough to go through life with her? Will I be willing to give up all else if need be and deem the world well lost if I have but her? And the young woman should question herself in like manner.

I always thought it a pretty good test of one's love if they decided that they would be happy to live forever in some remote corner of the world alone with the object of their affection. When we can truly say that no other person in the world has the charm for us that this one has; when we feel that his or her presence makes the world seem bright and their absence makes it dark; when we can say "Where thou goest I will go, thy people shall be my people and thy God my God," in the words of Ruth, then we may be sure that we have found the right one.

Years may come and years may go; the personal charms which belonged to youth may vanish like the dew of morning; toil and privation may fall to our lot in life; care and sorrow may bow the heart and whiten the head, but ever, always, there is the sweet

charm, the comfort which never departs—our love grows stronger through it all. Brighter it grows in adversity, more precious it is as the years go by. Well may it be called the grandest thing in the world, for it truly is.

But, as our correspondent, Burdock, says in another column, What about those people who are married and learn to love someone else?

God pity them! Surely that must be the saddest fate of all, to marry when the heart does not go with the hand, only to find when too late that it is all a mistake. Yet I can but think that one who is loyal to vows once taken will not find themselves in a position to realize the fact that they do love someone else.

Reprehensible, indeed, must be conduct upon the part of any married person which should give another cause to think they were beloved. How any sane woman can so far forget her womanhood as to learn to love a man who is not her husband I cannot understand. And on the other hand, how any married man can so far degrade himself as to make love to another woman is fully as unanswerable.

If any woman is so unfortunate as to have married a man whom she does not love she may far better be studying how to learn to love him rather than looking about for some other man to love.

But I am inclined to think that the majority of marriages now-a-days are not unhappy ones. An occasional instance where the opposite is evidently true may be found, but Cupid is the same bold archer that he ever was and the human heart to-day is just as vulnerable to his darts. The lads and lassies woo and wed after the good old fashion, as a rule. Coercion upon the part of the parents may sometimes be used, but I believe this to be rare. Young America does very much as it pleases in this respect.

It is true that the records of our divorce courts show altogether too many cases of separation, yet, after all, as we look about us these homes where love and unity abide are largely in the majority. Were our divorce laws more rigid it would undoubtedly make those who now recklessly enter matrimony more careful.

How true it is that one's life is made happy or unhappy by marriage. A mistake here is apt to ruin the whole future. The young ought to give more heed to this than very many of them do.

BURDOCK NO. 1 RE-APPEARS.

Dear Editor: I have been thinking for a long time of joining your band again. I used to belong when Beatrix was editor, but followed her to another field.

I had an article all planned when I saw my nom de plume in your paper. I caught my breath quickly and wondered if I had sent my contribution while asleep. Then it occurred to me that many people in this world have the same name and that Burdock might grow in Sanilac county as well as in Calhoun. I like my name, and it has a history.

I felt like giving Sanilac Burdock a word of cheer when I read her article. If more people would heed her advice there would be fewer divorces, more happy homes, and I think it not too forcible to say fewer murderers in the world. If people married whom they loved their children would be born with love instead of murder in their hearts.

But what about those people who are married and learn to love someone else, or fancy they do? That seems to be the way of the world now-a-days. I see so many unhappy people it brings to my mind the idea that if children were differently trained there might be more happiness in the world. My own experience in life, too, makes me think the remedy I am about to propose a good one.

Children are taught to look forward to brighter, happier times to come by-and-by. They are made to think that if they do right now some great reward is in store for the future. I think fairy stories have this influence.

Teach them to find the reward for right doing in their own hearts now. We know from experience that the by-and-by is no better than the now. Teach them to glean the bright from the now, and take the world cheerfully as it comes.

"This world will yield as we make it
A harvest of thorns or of flowers;
There's no time like the present time
The future is not ours."

A dear friend of mine says that her

mother would never sing "Sweet by-and-by" without changing the words to "Sweet now-and-now."

This is God's world as well as the next and we are planted here to grow physically, morally, spiritually.

We cannot grow properly in any of these ways if we are not cheerful. We must overcome our sorrows and sanctify them to our good. Let us live in this world while we are here and in the next world when we get there. Let us live to make this world happy and good and we will have nothing to regret in the next. Let every child form the habit of thinking at night of all the good things the day has had in store and close its eyes feeling that this is a bright and happy world. Teach them that when they have done wrong the noblest, grandest thing one can do is to confess that wrong and say, "I am sorry." So many think it humiliating and unmanly. To me it is the bravest thing one can do. Remember, please, that a great many of the sorrows of this world are caused by misunderstandings. If we understood each other's thoughts and motives better we would be happier with our friends. So many times our feelings are wounded by careless words or acts. Let us be brave to acknowledge our wrong deeds and confess our sorrow. We will be happier for it and so will our friends.

"True worth is in being, not seeming,
In doing each day that goes by
Some little good thing, not in dreaming
Of great things to do by and by."
Battle Creek. BURDOCK.

GETTING ALONG WITH THE WORK.

I have thought for a long time that I would like to tell the readers of The Household how I get along with my work this hot weather. In the first place we get up early and then I get my out-door work done first—such as picking peas or beans or greens, and get my radishes and put them in cold water, not letting them stay in the hot sun all day, as it makes them more brittle to get them in before the hot sun shines on them.

Next I get my beds made and sweeping done, then get things ready for dinner. If I have any time to spare I sit down and read.

When I have churning or baking to do I get that done as early as I can and let my fire go out, to be saving as well as for comfort. I haven't an oil stove to use, quick to start and quick to go out, but when I get my No. 9 range heated up I can do lots of baking at once. I have two men to work for and do all but the washing; the men help me do that.

I will tell you how I take care of my milk and butter. I keep the milk and cream in the cellar, which I have whitewashed with lime. This helps to keep it sweet, but, of course, I have to do my part, sweep and wash and clean the stairs frequently, wash crocks and covers. My milk shelves are made out of a binder box fixed up nicely and I have netting for a curtain and one at the door to keep out the flies. I like to take care of milk and butter if it isn't too warm. I can't slight this part of my work, for if there is anything I detest it is poor butter.

If this does not find the waste basket I may try again, but this is new work for me. I will close with a recipe for steamed Indian loaf.

Rives. MRS. C. E. F.
(Recipe will be found in another column. Ed.)

WHY?

Why should there not be clubs of farmers' wives in all rural communities? Why do not the women upon the farms—surely the bearers of many burdens and the possessors of much useful knowledge—organize and hold meetings to discuss the best means of improving their surroundings?

Oh, I well know the number of organizations is appalling. But that is not the point. You have your aid societies, your Epworth Leagues, Christian Endeavors, your Farmers' Institutes and Granges. All good and doing praiseworthy work, but none of them especially designed to help you with your daily work.

Let me illustrate my meaning by a bit of personal experience. I am both an enthusiastic club woman and a Sabbath school worker. Yet I derived more real mental stimulus from the meeting of the Michigan Woman's Press Association, recently held in Grand Rapids, than from either of the first mentioned institutions. Why? Simply because I came in touch with women who were doing work similar

to my own and learned something of their methods, discouragements and encouragements.

All the poetry written about it cannot make of the well-done work of the wife of a successful farmer anything but hard work. Did you ever stop to think that any well-done and successful work must of necessity be hard? "Just writing a little story; that can't be hard work," said a Job's-comforter of a friend of mine. I assured her if she could write good stories easily she had better drop school teaching and devote her time to literary pursuits. Oh, I wish people would stop crying out against hard work, as if it was the greatest evil under the sun! The victories won by steady and persistent toil are the ones that make better men and women of us.

But I am wandering. Could not the wives of farmers come together and discuss the best ways of butter making, fruit canning, and cooking, as well as the more important ones of selecting the most nutritious foods, proper ventilation and clothing? Then there are the children; surely the candid experience of one mother might help another.

I was a farmer's child and I spent many years teaching farmers' children. In two respects they are more favored than those who dwell in cities. They are shielded from many temptations, and they live close to nature. To balance this, they miss many advantages given to the children in cities. But they deserve and it is your duty to see that they have the best things of life; the best teachers, the best books, papers and magazines, the best homes, and the best fathers and mothers. I am no believer in the natural depravity of children. To be sure, heredity does much, but associations and training does far more.

God bless the farmers' boys and girls! Aye, and the farmers and farmers' wives. It is from these quiet homes that the world's workers come.

HOPE DARING.
(We think this plan of holding meetings to discuss the various phases of housework and the care of children would be productive of great good. Surely if any one needs the benefit of such counsel as one may give another, farmers' wives do. The mere getting together would do them good, too. It always does good to get away from home and mingle with our neighbors. Every woman has some bright ideas not possessed by everybody else. An exchange of ideas will be helpful. We hope to hear that some such clubs as are suggested have been formed very soon. Ed.)

SHORT STOPS.

Ivy Leaf writes: I want to say a few words about employing our spare time these long summer afternoons in making some nice little gifts for our friends next Christmas. Now, I know very well that not every one has the time to do this, for what with fruit canning, harvest hands and all the extra work which summer brings to the farmer's family it is not always possible, neither is it advisable to try to do anything extra. But I am sure there are some who like myself have time to spare, and we may as well be busying ourselves in some such way, and it will be such a help at holiday time.

I am busy just now crocheting edging. I have enough for two white skirts and an apron already, and I know just who I shall give it to. I use No. 40 thread and a medium-sized hook, selecting some pretty pattern. This is nice pick-up work.

My sister is making knitted lace for a pair of pillow-slips in her odd moments. She will buy the cloth, make up the slips with hemstitched hems and give them to a young married friend of hers who is going to house-keeping this fall.

I know what an undertaking it is for one to prepare a number of presents in a limited space of time just when everything is in a rush at holiday time, and it is so much nicer to take one's time for it during the year. Nothing makes more acceptable presents for your lady friends than trimming for underclothes, which can be made in suitable lengths and laid away ready for use.

(This is all very true and I have made yards and yards of such lace myself; but unless one has plenty of spare time it is foolish to try to knit edging when it can be purchased so cheaply. I once gave my eyes a strain from which they have never fully recovered by knitting lace from a complicated pattern, following the printed

instructions. Crocheting lace is less trying to the eyes than knitting it.—Ed.)

Mrs. John, of Oxford, writes: I want to tell the readers of the Household how much labor is saved by using a cherry pitter. We have bushels and bushels of cherries and it has always been such a tedious job to pit them by hand. The other day my husband came home from town with a small machine which he had bought to do this work. Maybe you think I was not thankful, not only for the machine, but for the thoughtfulness which prompted him to buy it for me. The cherries are remarkably free from worms this year, and as I see them pass through the machine with the pits taken out I have no fear (as I always thought I should have) of the tiny white mites being left in. I think we women ought to have more labor-saving contrivances. We have not half so many as the men have.

Mother of Four writes: I have just finished my washing, and it is nearly twelve o'clock. Ordinarily I should be hurrying to get dinner now, but today husband went to town and will not be home until middle of the afternoon, so this makes it unnecessary to get dinner at noon. He took one of the little boys with him and the other is visiting at my sister's for a few days. This leaves me pretty nearly alone, you see.

But what I started to say is this: I rub my clothes out of cool water this summer and find it saves me much fatigue, and it seems to get them clean just as well, too. I soak them over night in warm suds, then in the morning add enough hot water to it to just warm it up a little, then rub them out and scald them, when they are ready to rinse. It is hard washing dirty clothes anyway. The men's shirts and overalls get so sweaty and dirty. Our men wear cotton pants, not overalls, this year, and I find they are much more easily washed.

PRETTY APRONS.

Make the apron of the thinnest white muslin; one width is sufficient. In length it should reach to about four inches below the knees, after being finished. At the bottom put a hem one and three-quarters inches deep, and through this hem draw a pink ribbon, one and a half inches wide. Across the bottom is a ruffle of very thin white lace, three inches wide. Allow quarter of a yard for fullness. Make six tiny bows, out of baby ribbon, same shade as that in the hem, and sew them on at equal distances apart, where the lace is sewed on the edge. There is no hem at the sides. Gather the apron at the top and put on a band one and a quarter inches deep, and twelve inches long. In the middle of the band put a bow, made of same ribbon as that in the hem, the bow is made with four loops and two ends, each end is four inches long. At each end of the band is sewed a ribbon; this is brought around the waist and hooked under a large bow with long ends; this ribbon is two inches wide, same shade as the other ribbons.

GIRL'S APRON.

A pretty apron for little girls from nine to twelve years old, is made of thin white muslin, long enough to reach the knees, and about five-eighths of a yard wide; that gives enough fullness at the waist. Cut the two corners at bottom rounding, and put a hem as narrow as possible all around the apron; to this hem is sewed a very pretty white lace edging, one and a half inches wide; it is put on a little full. The belt for this is the same muslin, one and a half inches wide, goes entirely around the waist and is fastened at the back under a large bow with long ends made of light-blue satin ribbon, two inches wide. The gathers at the waist-band reach from hip to hip. Take a strip of the muslin one inch wide, double it, and sew it together, make two straps of this for the shoulders, make them long enough to go over the shoulders and fasten at the apron-belt back and front; put the ends four inches apart at the front, same at back. On one side of each strap (the edges that are sewed together) put some of the lace, sew on a little fuller than on the apron part. The lace falls over the shoulders. On the top of each shoulder put a bow made of the blue satin ribbon, with ends five inches long falling over the shoulders.

CHILD'S SLIP.

This slip is for a young child, either boy or girl. It is made with a yoke, Mother Hubbard style, has straight,

loose sleeves, a straight band at the wrist, large enough to put the hand through, and a narrow standing collar. It is made of fine checked gingham, dark blue and white. Around the yoke is worked a pretty pattern in cross-stitch, with white cotton. Put the stitches on the white squares. The bottom of the skirt has a hem three inches deep and above it is worked a pattern same as on the yoke. The slip is fastened at the back with small, white buttons.

Another pretty slip is made same style as given above, of brown linen embroidered with black. The pattern may be done in solid embroidery or outline-stitch. Put a narrow pattern on the collar and wrist-bands. Use embroidery cotton, it washes best. Fasten the yoke with small black buttons. These slips make pretty and cool dresses for young children and are easily made.

CLARA.

NITRE FOR WEAK EYES.

What particular property there may be in spirits of nitre which strengthens weak eyes I am sure I do not know; but certain it is that bathing them in this (reduced one-half with rain water) has been of great benefit in a number of cases which have recently come within my observation. For severe inflammation keep cloths wet in the solution bound upon the eyes, but it is better to begin the treatment before this gets so far advanced. After recovery wet the eyes frequently for a time.

Of course where there is any defect in the eyes this treatment would not avail; but I am convinced that many cases where there is mere weakness caused by too close application the use of spectacles might be avoided, particularly in the young, where the nitre to be applied faithfully for a while.

A man whose eyes were so badly inflamed that it was decided by eminent physicians that one of the balls must be removed if the sight of either eye were to be preserved, determined to try this simple remedy before submitting to the operation. In less than one month he was out at work.

Most persons dread to put on spectacles. I am sure that in my own case the period where they were a necessity has been put off for a number of years by following the above treatment. Before paying three or four dollars for a pair of spectacles try it. It will do no harm anyway.

Wexford Co. SISTER SUE.
(This treatment has proven very beneficial in our family. Only this summer a severe case of inflammation of the eyes was cured by the simple application of spirits of nitre and water. A friend, in whose family there have been many cases of this kind, tells me that she has never known it to fail of giving relief. Ed.)

SOME SEASONABLE KITCHEN HINTS.

A good way to prepare pork for supper is to boil it, changing the water two or three times to freshen it, then slice it and let it stand in vinegar a couple of hours. Arrange the slices on a pretty platter, sprinkle with pepper, and you will almost fail to recognize "that everlasting salt pork."

Our potatoes are quite small on account of dry weather, and I'll tell you one way I fix them. There may be others who have some of the same kind. I select the largest to cook for dinner, then wash all the little ones and when the others are cooked put these in and boil them, skins and all. Let them cool and peel them. At supper time have some butter real hot in the spider and put them in whole, with pepper and salt, and brown them. If any are a little larger cut them in pieces, but do not slice.

Do any of you ever make milk shake? Our men folks like it best of anything I've made for them to drink this summer. I take a small piece of ice put in a cotton sack and pound with a mallet till fine like snow. Then put it in a fruit can (two quart), add a tablespoonful of sugar and a little vanilla and fill up with milk. Put rubber and cover on and shake till it foams. It is easy to make and is very refreshing.

Genesee.

EVA.

D. G. R. & W. R. R. Annual Low Rate Excursion to North Michigan Resorts.

Wednesday, August 25th, is the date for this popular trip this year. D. G. R. & W. R. R. train will leave Detroit at 7:30 a. m. Round trip rates will be as follows: Mackinac Island, \$6; Petoskey and Bay View \$5; Charlevoix and Traverse City, \$5. Return limit Sept. 3d. Full particulars given by agents and posters.

GEO. DeHAVEN, G. P. A.

A CASE FOR SPECTACLES.

"Do you see my spectacle-holder?" asked a gray-haired friend the other day as she pointed to a pretty bow of black satin ribbon upon the front of her dress waist, and proceeded to deposit a pair of glasses therein.

The bow seemed to be placed there for ornament, yet in one of the loops there was just room to slip a pair of spectacles. Of course this loop hung straight down from the center of the bow to avoid all danger of loss, and other loops and ends of the ribbon quite concealed the spectacles when tucked snugly into place. The bow was fastened to the bodice with black safety pins and could be easily changed from one dress to another.

I thought it a very neat and convenient way of disposing of something which, if necessary, is none the less inconvenient to carry about.

E. E. R.

CONTRIBUTED RECIPES.

Cabbage Salad.—One egg, two table spoonfuls sugar, one teaspoonful butter, one teaspoonful dry mustard, two tablespoonfuls flour, one cup sweet milk, one cup vinegar. Place on stove and stir till thick as cream, then set aside to cool. Salt and pepper two quarts cabbage, chopped, and turn the dressing over when ready to serve.

Potato Salad.—Slice cold boiled potatoes with a few hard boiled eggs, quite thin and when ready to serve turn over them a dressing made as for cabbage salad. Nice for tea on a hot day.

Chicken Salad.—One chicken weighing four pounds. Boil till quite tender, when cold pick meat from bones and chop it moderately fine. Chop enough cabbage to make same quantity as of meat. Mix lightly with two forks. Celery may be used if preferred. Make a dressing by rubbing the yolks of eight eggs in four tablespoonfuls of soft butter, add three tablespoonfuls made mustard, one-half teaspoonful cayenne pepper and one teaspoonful salt. Add two-thirds cup thick sweet cream and half a pint vinegar. Let boil on the stove, stirring constantly till thick as whipped cream. When cold mix lightly through the chicken. Pile in a salad bowl and do not press down.

Steamed Indian Loaf.—Two cups buttermilk, one-half cup molasses, two teaspoonfuls soda, three cups cornmeal, one cup flour. Mix and steam three hours and bake half an hour. Good hot or cold. Also good in milk.

MRS. C. E. F.

For kindling, when pine is not at hand, melt three pounds of resin with a quart of tar, being careful that they do not catch fire. Then stir thick with sawdust and spread upon a board to dry. When cold break into lumps size of a small egg. One of these will burn from a match and blaze until the wood is ignited.

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New evidence shows that Alkavis, the new botanical product of the Kava-Kava Shrub, is indeed a pure specific cure for diseases caused by Uric acid in the blood, or by disorders of the Kidneys and urinary organs. A remarkable case is that of Rev. A. C. Darling, of North Constantia, New York, as told in the *New York World* of recent date. He was cured by Alkavis, after, as he says himself, he had lost faith in man and medicine, and was preparing to die. Similar testimony of extraordinary cures of Kidney and bladder diseases of long standing, comes from many other sufferers, and 1,200 hospital cures have been recorded in 30 days. Up to this time the Church Kidney Cure Co., No. 418 Fourth Avenue, New York, are the only importers of Alkavis, and they are so anxious to prove its value that for the sake of introduction they will send a free treatment of Alkavis prepaid my mail to every reader of the MICHIGAN FARMER who is a sufferer from any form of Kidney or Bladder disorder, Bright's Disease, Rheumatism, Dropsy, Gravel, Pain in Back, Female Complaints, or other affliction due to improper action of the Kidneys or Urinary Organs. We advise all sufferers to send their names and address to the company, and receive the Alkavis free. To prove its wonderful curative powers, it is sent to you entirely free.

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In this work all subjects are arranged and treated just as words simply are treated in a dictionary—alphabetically, and all capable of subdivision are treated under separate heads; so instead of one long, wearisome article on a subject being given, it is divided up under various proper heads. Therefore, if you desire any particular point of a subject only, you can turn to it at once, without a long, vexatious, or profitless search. As for instance, take the article "Man." You find there a general description, but the various members of the organization, with all their functions, are also minutely described under such heads as Brain, Blood, Bread, Digestion, Diet, Circulation, Artery, Bronchi, Ear, Eye, Bone, Hand, Heart, Liver, Lungs, and so on.

In like manner all branches of knowledge are treated—Arts, science, etc., as will be seen by an examination of the work.

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The Markets.

WHEAT.

The past week has been an exciting one in the wheat market. A large shipping demand as the result of light crops in Europe, India and Australia, with a scarcity of cash wheat, has boomed the market beyond the expectations of the most ardent bulls. No. 2 red closed Thursday at 87½c, after selling up to 88½c. While there is a good demand for cash wheat, a good deal of the advance is due to speculation. When these speculators begin to sell to secure profits a reaction must take place. But wheat will be good property for the coming year, although it may not sell much above present figures. It looks as if 90 cents would again be the danger line, and an advance beyond that point in this market would not be long maintained. The foreign demand is very heavy for the season, and European markets firm and advancing.

The following table exhibits the daily closing sales of spot wheat in this market from July 12 to August 12, inclusive:

	No. 1	No. 2	No. 3
White.	Red.	Red.	Red.
July 20.....	78	78	73½
" 21.....	79½	79½	76½
" 22.....	78	78	75
" 23.....	74½	74½	71½
" 24.....	75	75	72
" 26.....	74½	74½	72½
" 27.....	76	76	73½
" 28.....	75½	75½	72½
" 29.....	77½	77½	74½
" 30.....	77½	77½	75
Aug. 1.....	78½	78½	76½
" 2.....	80½	80½	78
" 3.....	82½	82½	80½
" 4.....	79½	79½	77½
" 5.....	81½	81½	79½
" 6.....	80½	80½	78½
" 7.....	81½	81½	79½
" 8.....	83	83	80½
" 9.....	85½	85½	83½
" 10.....	87½	87½	85
" 11.....	87½	87½	85
" 12.....	87½	87½	85

The following is a record of the closing prices on the various deals in futures each day during the past week:

	Aug.	Sept.	Dec.
Friday.....	81½	81½	83½
Saturday.....	80½	80½	81½
Monday.....	81½	81½	82½
Tuesday.....	81	81	84½
Wednesday.....	85½	85½	86½
Thursday.....	87½	87	87½

The visible supply of wheat in the United States and Canada on Saturday last was 17,650,000 bu., as compared with 46,429,000 bu. at the same date a year ago. As compared with the previous week, the visible supply shows a decrease of 154,000 bu. The decrease in the visible supply, though very small, helped to strengthen the market, as a large increase was expected.

Foreigners are free buyers even at the recent advance, which is pretty good evidence that crops abroad are far below an average.

The French Ministry of Agriculture has issued its usual July report, which for winter wheat may be summarized by saying that the condition is returned as fair to good in 64 departments, while a year ago 80 departments were so returned; this year 20 departments have a condition below fair, against 3 last year. The spring wheat condition may be considered about equal to that of a week ago. The report is interpreted as indicating a yield of 31,000,000 qrs to 33,000,000 qrs, against 42,000,000 qrs last year, and we may add that some private estimates show a still greater deficit. If these figures are approximately correct it would indicate an importation of about 75,000,000 to 90,000,000 bu. during the coming year.

The Dixie Mill, Nashville, Tenn., says: "Wheat harvesting and threshing are practically over in the south, and she can boast of having raised and taken care of the best crop in her history. Receipts continue light, as many are holding for better prices."

The Liverpool Corn Trade News estimates the wheat crop of Russia at 348,000,000 bu., against 398,000,000 bu. in 1896 and 404,000,000 bu. in 1895.

According to the returns to the Daily Trade Bulletin and Minneapolis Market Record, the aggregate supply of breadstuffs—flour and wheat—in second hands in the United States and Canada on August 1, 1896. Stocks of flour were reduced 88,900 bbls. during July, and supplies of wheat increased 1,860,000 bu. Stocks of breadstuffs in America and Europe, including quantity afloat, on August 1, were equal 77,000,000 bu., against 88,700,000 bu. on July 1, and 124,300,000 bu. on August 1, 1896.

Just at the present there is less complaint of rust and blight in Minnesota, and some indications that, with the cooler weather enjoyed, there is a disappearance to some extent of the rust. Offsetting this apparent improvement, however, in Minnesota, there is further realization of the loss of prospects in South Dakota. Harvest is now on in this state, and as reapers get into the fields it becomes more apparent that the crop is by no means a large one. The complaint comes from all sections of the state that the wheat is thin on the ground, short in straw and head, and estimates of rate of yield are shrinking.—Chicago Times Herald.

DAIRY PRODUCTS.

BUTTER.

There is a much better tone to this market, and we note improvement in prices of extra dairy, which is selling at the highest point reached in a number of weeks. The outlook for butter seems to be better than for some time, and as the weather becomes cooler we look for a general improvement in the market and an advance in prices. Quotations in this market on Thursday were as follows: Creamery, 15½c; prime dairy, 12½c; fair to good, 10½c; common grades, 6½c. At Chicago the market is reported in a healthy condition, with a good demand for the best table grades at slightly higher prices.

Receipts are improving in quality, and the outlook is favorable for a good market for the finer grades. Quotations in that market on Thursday were as follows: Creameries, extras, 15c; firsts, 12½c; seconds, 11½c. Dairies—Extras, 12c; firsts, 10½c; seconds, 9c; packing stock, fresh, 8c. The New York market has not shared in the improvement noted at western points, and while there has been no decline in value, it requires better quality to reach top prices than last week. The New York Tribune, in its review of the market, says: "While there has been a steady falling off in the receipts from all sections, the demand has shown no material improvement, and the quantity of stock available has been fully equal to all requirements; this has checked any disposition to advance prices; in fact, for other than high-grade goods, the market has been very dull, unsettled and weak. Extra creamery has been and is still steady at 15c. Buyers are paying that price without protest when they secure gilt-edged goods, but it requires only slight faults to cause a rejection that means generally a cut of at least 1c per lb. At 14c there is a good deal of fine butter offering, while thousands of tubs of sour and summery creamery can be bought in range of 11½c to 13c. Receivers are unable to find a home outlet for these goods, and there is at present no demand whatever for export. Shippers have been looking around for fine to fancy creamery in boxes, and have taken such in range of 15½c to 16c. At present that class of stock brings about ½c more when packed in boxes than in tubs." Quotations in that market on Thursday were as follows: Creamery, western extras, per lb. 15c; do firsts, 14c; do thirds to seconds, 11½c; do state extras, 15c; do thirds to firsts, 11½c; state dairy, half-firkin tubs, extras, 14c; do Welsh tubs, fancy, 13½c; 14c; dairy tubs, thirds to firsts, 10½c; state dairy, tins, etc., 9½c; imitation creamery, best, 12c; do thirds to firsts, 9½c; factory, June packed, firsts to extras, 10½c; do fresh, firsts, 9½c; do thirds to seconds, 7½c. At the Utica Board on Monday 37 packages of creamery were sold at 15c, the same price as prevailed the previous week. At Little Falls on Monday 23 packages of farm dairy were sold at a range of 13½c to 15c, mostly at 15c.

CHEESE.

Cheese has improved in the eastern markets since a week ago, and no doubt the advance will be reflected in the west within a day or two. The advance is likely to hold, as we note a sharp upturn in American cheese in Liverpool. In this market 8c is still the top price for the best State full creams, but if values hold up at the east we look for an improvement. At Chicago the market, while steady, shows no disposition to advance, but eastern advices will probably change the situation. Quotations in that market Thursday were as follows: Young Americas, 7½c; twins, 6½c; cheddars, 6½c; Swiss, 6½c; Limburger, 6½c; brick, 5½c. The New York market has advanced since a week ago, and while rather unsettled, is improving and a fair demand from exporters. The New York Tribune says in its weekly review of the market: "This week opened on Monday with a strong holding in view of the higher prices paid in the country, and receivers generally asked 8½c for fancy colored, and 8c for fancy white. Export buyers, however, refused to pay those prices, and the actual business done was moderate. A few sales were settled, however, at 8½c for fancy colored and 8c for white, and those figures were certainly all that could be depended upon. Small size full cream have been in lighter supply, and prices gradually gaining strength. Fancy colored have been in good demand from the home trade and held firmly at the close at 8½c. Small white are held higher in sympathy with colored, but demand exceedingly slow and 8c the extreme for finest lots." Quotations in that market Thursday were as follows: Large white, 7½c; small white, 7½c; large colored, 8½c; small colored, 8½c; part skims, 4½c; full skims, 2½c. At the Utica Board on Monday 9,256 boxes were sold at a range of 7½c to 8c; the previous week 7,878 boxes were sold at a range of 7½c to 7¾c; and on the same day a year ago 8,933 boxes were sold at an average price of 7½c. At Little Falls on Monday 6,712 boxes were sold at a range of 7½c to 7¾c. At Liverpool on Thursday the finest white and colored American cheese sold at 4½c per cwt; the previous week quotations were 3½c 6d, showing an advance of 1s 6d per cwt since our last report. Market quoted firm.

DETROIT PRODUCE MARKET.

Detroit, August 12, 1897.

FLOUR—Quotations on Jobbers' lots in barrels are as follows:
Straight..... \$4.25
Clears..... 4.15
Patent Michigan..... 4.75
Low grade..... 3.50
Rye..... 2.50@2.75
CORN—No 2 mixed, 27c; No 3 26½c; No 2 yellow, 30c; No 3 yellow, 29c; No 4 yellow, 28c.
OATS—No 2 white, old, 21c; new, 19½c; No 3 white, new, 18c; light mixed, new 18c.
RYE—No. 2 quoted at 46c; August futures, 46c; September, 46½c.
FEED—In jobbing lots—Bran and coarse middlings, 39c; fine middlings, 42c; coarse cornmeal, 31c; corn and oat chop, 30c; cracked corn, 32c per ton.
BUTTER—Quoted as follows: Creamery, 15½c; choice dairy, 12½c; fair to good dairy, 10½c; ordinary grades, 6½c per lb.
EGGS—Regular receipts, 10c per doz; candied, 10½c.
BEANS—City hand-picked, 85¢@90¢ per bu in car lots.
POULTRY—Live fowls, 8c; spring chickens, 9c; ducks, 7c; turkeys, 8c per lb.
PEARS—Selling at 1¢ per bu.
APPLES—New selling at 1½¢@2¢ per bbl.
GRAPES—Live selling at 25¢ per 10-lb basket.
SMALL FRUITS—Huckleberries, 22.50¢

250 per bu; blackberries, \$1.40@1.75 per bu; currants, black, \$1 per 12-qt basket.
PEACHES—Quoted at \$1.25 per bu.
CABBAGES—75c per bbl crate for Michigan.

DRIED FRUITS—Evaporated apples, 4½¢@5c; evaporated peaches, 9c; dried apples, 2c per lb.

HONEY—Quoted at 10½¢ in sections for white, and 8¢@9c for dark comb; extracted, 5¢@6c per lb.

PROVISIONS.—Mess pork, \$8.75 per bbl; short cut mess, \$10; short clear, \$9; compound lard, 4½c; family lard, 4½c; kettle lard, 5½c; smoked hams, 9½¢@10½c; bacon, 7½¢@8c; shoulders, 6½c; picnic hams, 7½c; extra mess beef, \$7.50; plate beef, \$8.

COFFEE.—City prices are as follows: Rio, roasting, 15c; fair, 16c; good, 18¢@19c; prime, 20c; choice, 22¢@23c; fancy, 24c; Maracaibo, roasted, 25c; Santos, roasted, 24c; Mocha, roasted, 25c; Java, 29c.

HARDWARE—Wire nails, \$1.50; steel cut nails, \$1.50 per cwt, new card; axes, single bit, bronze, \$5; double bit, bronze, \$8.50; single bit, solid steel, \$6; double bit, solid steel, \$9.50 per doz; bar iron, \$1.40; carriage bolts, 75¢ per cent off list; tire bolts, 70¢ and 10¢ per cent off list; painted barb wire, \$1.65; galvanized do, \$1.85 per cwt; single and double strength glass, 70¢ per cent off list; sheet iron, No 24, \$2.50 per cwt; galvanized, 75¢ and 10¢ per cent off list; No 1 annealed wire, \$1.40 rates.

OILS—Raw linseed, 36c; boiled linseed, 38c per gal, less 1c for cash in ten days; extra lard oil, 40c; No 1 lard oil, 31c; water white kerosene, 8½c; fancy grade, 11½c; deodorized stove gasoline, 7½c; turpentine, 34c per gal in bbl lots; in less quantities, 40¢@42c.

HAY—Best timothy in car lots, \$9.50@10 per ton; rye straw, \$5.25; wheat and oat straw, \$4.50 per ton. Loose hay—Prime timothy, \$8.00; second grade, \$7.00; clover, first crop, \$5.00; clover and timothy mixed, \$3.00.

HIDES—No 1 green, 6c; No 1 cured, 7c; No 2 green, 5c; No 2 cured, 6c; No 1 cured calf, 8c; No 2 cured calf, 6½c; No 1 green calf, 8c; No 2 green calf, 6½c per lb; sheepskins, 60¢@80c each.

WOOL—Unwashed fine, 13¢@13½c; unwashed medium, 16¢@17c; washed fine, 16¢@17c; washed medium, 20¢@21c per lb.

DETROIT LIVE STOCK MARKET.

Michigan Central Stock Yards.

Detroit, Mich., August 12, 1897.

CATTLE.

Receipts Thursday 752 head, as compared to 515 one week ago. The quality was not very good, being mostly stockers and common to fair butchers. Trade opened active and steady for good handy butchers. Common to fair slow and 20c to 25c lower. Stockers 10c lower. Four dollars was highest price to-day for 4 steers av 1180 lbs, but the bulk changed hands at prices ranging from \$2.60 to \$3.90; old cows and common thin butchers, \$1.50 to \$2.50; bulls, light, \$2.50 to \$2.65; fair to good butchers, \$2.75 to \$3.00; stockers, \$2.90 to \$3.65; feeders, \$3.75 to \$4.00; oxen, \$3.00 to \$3.50. Veal calves—Receipts, 149; one week ago, 76. Opened active. A few choice brought \$5.75, but the bulk changed hands at \$5 to \$5.50 per 100 lbs. Milch cows and springers active. Range from \$25 to \$45 each.

Pinkney sold Sullivan 3 stockers av 476 at \$3.10, and 2 bulls av 600 at \$3; 3 fair heifers to Black av \$56 at \$3.60, and a bull to Caplis & Co weighing 980 at \$2.75.

York sold Mich Beef Co 3 bulls av 893 at \$3 and 43 mixed butchers and stockers av 734 at \$3.50.

P. O'Connor sold Sullivan 4 stockers av 480 at \$3.60, and 3 cows to Mich Beef Co av 950 at \$3.

Beach sold Sullivan 25 most stockers av 446 at \$2.90.

Haley sold Grant 10 mixed butchers av 689 at \$2.75 and a bull to Mohr weighing 730 at \$2.75.

Robb sold Sullivan 3 steers av 1180 at \$4, 4 stockers av 637 at \$3.50, and a fat heifer weighing 730 at \$3.25.

Rook sold Mich Beef Co 4 mixed butchers av 1,175 at \$3.50, 5 canners av 908 at \$1.50 and a bull weighing 560 at \$2.75.

Shook sold Schleicher 9 mixed butchers av 759 at \$3.25.

Lingeman sold same 2 mixed butchers av 655 at \$3.19, and a bull to Sullivan weighing 1,120 at \$2.75.

Burden sold Mich Beef Co 3 mixed butchers av 775 at \$2.50, and 2 fat cows av 1,025 at \$3.25.

Lingeman sold Sullivan 3 steers av 683 at \$3.70, 2 heifers to Black av 900 at \$3.70 and 3 cows av 1,176 at \$3.25.

Granger sold Marx 13 mixed butchers av 604 at \$3.10.

Sprague sold Caplis & Co 9 mixed butchers av 814 at \$3.05.

P. O'Connor sold H W Miller 15 steers av 723 at \$3.75.

Spicer & M sold Kammen 7 mixed butchers av 630 at \$3.16, a bull to Sullivan weighing 670 at \$2.70, 2 steers av 940 at \$3.75 and a fat heifer weighing 1,230 at \$4.

E N Sweet sold Mich Beef Co 26 stockers av 661 at \$3.25 and 4 light bulls av 537 at \$3.

Weeks sold same 3 good sausage bulls av 1,216 at \$2.85, 4 fat cows av 1,007 at \$3, and 3 fat heifers av 806 at \$2.75.

Glenn sold same 12 stockers av 662 at \$3.40 and a canner weighing 1,010 at \$2.

Beach sold Sullivan 22 stockers av 621 at \$3.50 and 7 mixed av 630 at \$2.65.

Glenn sold Black 3 common butchers av 566 at \$2.50, 3 fat cows av 1,126 at \$3.50, a cow to Clancey weighing 1,080 at \$2.60, and 5 steers to Sullivan av 738 at \$3.75.

Leach sold same 7 steers av 741 at \$3.75 and 3 mixed butchers to Black av 750 at \$3.

Sharp sold Sullivan 9 mixed av 773 at \$3.50 and 5 do av 816 at \$2.80.

Felch sold same 2 bulls av 1,280 at \$2.75 and 4 stockers av 640 at \$3.25.

Stevens sold Mich Beef Co 7 fat cows av 961 at \$3 and 2 bulls av 885 at \$2.75.

Ed Clark sold same 14 steers av 891 at \$3.80.

Thos Robb sold Mich Beef Co 5 fair butchers cows av 944 at \$2.85.

Clark & B sold same 29 mixed stockers and butchers av 637 at \$3.30 and a bull weighing 680 at \$2.60.

Ackley sold same 3 fat cows av 815 at \$3.25 and 3 mixed butchers av 973 at \$3.65.

Nicols sold same 4 mixed butchers av 870 at \$3.20.

Spicer & M sold Wood 6 stockers av 518 at \$3.25, 4 bulls to Sullivan av 587 at \$2.70, and 2 steers av 705 at \$3.60; to Kammen 14 mixed butchers av 676 at \$3.25 and a cow weighing 1,000 at \$2.60.

Joe McMullen sold Mich Beef Co 14 mixed av 707 at \$3.35 and 3 cows av 940 at \$2.65.

Sharp sold same 2 oxen av 1,585 at \$3 and 10 mixed butchers to Schleicher av 792 at \$3.40.

Pallister sold Marx 4 steers av 85 at \$3.90.

Ansty sold Sullivan 8 stockers av 605 at \$3.50, 2 fat heifers to Caplis & Co av 945 at \$4, 6 mixed av 645 at \$3.35 and 3 cows av 993 at \$2.50.

Roe & Holmes sold Robinson 8 steers and heifers av 871 at \$3.90, 3 mixed butchers av 993 at \$3, 5 do av 970 at \$3, and 2 cows av 1,055 at \$2.50; to Cook & Fry 14 mixed butchers av 630 at \$3, 3 do av 510 at \$3 and a heifer weighing 690 at \$3.25.

13 stockers to Sullivan av 617 at \$3.60, 5 do av 620 at \$3.60, 8 do av 610 at \$3.50, 10 bulls av 578 at \$2.75, 18 stockers av 686 at \$3.70 and 3 bulls av 543 at \$2.75; to Magge 9 common butcher cows av 990 at \$2.50 and 3 av 950 at \$2.25; to Mich Beef Co 11 mixed butchers av 797 at \$3, 3 do av 883 at \$3, 4 do av 742 at \$3.25, 5 fat cows av 1,010 at \$3 and 3 do av 1,013 at \$2.75.

RECEIPTS THURSDAY, 972 head; one week ago, 619; market active and unchanged from prices paid one week ago. Range of prices: Lambs, \$4.25 to \$5.00; good mixed lots, \$4.00 to \$4.50; common to good mixed butchers, \$2.75 to \$4.00; culls \$2.00 to \$2.60.

Roe & Holmes sold Fitzpatrick 23 mixed butchers av 100 at \$3.00, 13 do av 95 at \$3.00, 28 lambs av 67 at \$5.00 and 67 do av 64 at \$4.75.

Spicer & Merritt sold same 20 lambs av 58 at \$4.75.

E O Knapp sold same 34 lambs av 60 at \$4.75.

Roe & Holmes sold Monaghan 8 lambs av 59 at \$4.50.

Hoover sold same 20 mixed butchers av 77 at \$3.00 and 33 most lambs to Holmes av 61 at \$4.55.

Glenn sold O'Neil 24 mixed av 81 at \$3.25 and 11 culls av 66 at \$2.00.

Patrick & Pline sold Fitzpatrick 29 mixed av 58 at \$4.12½.

Roe & Holmes sold Monaghan 15 most lambs av 61 at \$4.65, 27 av 78 av \$4.75, 7 common butchers av 91 at \$3.00 and 4 do av 120 at \$2.75, to Hammond, S & Co 37 lambs av 67 at \$4.90.

Sprague sold Fitzpatrick 11 lambs av 62 at \$5.00.

Ansty sold same 14 lambs av 61 at \$5.00 and 9 mixed av 100 at \$3.50.

Pickney sold Hiser 25 mixed av 74 at \$4. Carrier & R sold McIntyre, 12 mixed av 69 at \$3.25.

Weeks sold Young 33 lambs av 70 at \$5.

HOGS.

Receipts Thursday, 2,753, as compared to 2,223 one week ago. Market opened slow and lower, later trade was active at prices 10 to 15c lower than last Friday's closing. Range of prices, \$3.75 to \$3.85, bulk at \$3.80; stags, ½ off; roughs, \$3 to \$3.30; pigs, \$3.75 to \$3.90.

Leach sold Hammond & Co 45 av 206 at \$3.80.

Ackley sold same 62 av 198 at \$3.80.

Roe & Holmes sold same 89 av 178 and 92 av 192 at \$3.80.

Sprague sold same 46 av 192 at \$3.80.

Clark sold same 62 av 221 at \$3.80.

Stevens sold same 46 av 224 at \$3.80.

Rehfs sold same 38 av 204 at \$3.80.

Jedele sold same 29 av 210 at \$3.80.

Hoover sold same 25 av 186 at \$3.80.

Roe & Holmes sold same 42 av 190 and 63 av 202, 42 av 219, all at \$3.80, and 11 av 218 at \$3.75.

Hawley sold same 47 av 208 at \$3.77½.

Carrier & R sold same 98 av 209 at \$3.80.

Glenn sold same 45 av 215 at \$3.77½.

Pinkney sold same 35 av 226 at \$3.80.

Roe & Holmes sold same 47 av 161 and 20 av 192 at \$3.80.

Burnell sold R S Webb 71 av 194 at \$3.85.

Spencer sold same 74 av 191 at \$3.85.

Gorman sold same 10 av 237 at \$3.85.

Horne sold same 27 av 195 at \$3.82½.

Ansty sold same 15 av 159 at \$3.85.

Roe & Holmes sold same 45 av 198 at \$3.85.

O Nichols sold same 44 av 202 at \$3.82½.

Clark & B sold Parker, Webb & Co 12 av 227 at \$3.80.

Patrick & P sold same 57 av 223 at \$3.80.

Steers—Prime to extra choice finished steers, 1,250 to 1,400 lbs., \$4.90@5.05; prime to choice steers, 1,200 to 1,400 lbs., \$4.80@4.90; good to choice fat steers, 1,200 to 1,400 lbs., \$4.60@4.75; good to choice fat smooth steers, 1,100 to 1,200 lbs., \$4.50@4.60; green coarse and rough fat steers, 1,000 to 1,250 lbs., \$3.85@4.40. **Butchers Native Cattle**.—Fat smooth dry fed steers, 1,050 to 1,150 lbs., \$4.30@4.55; fat smooth dry fed light steers, 900 to 1,000 lbs., \$4.10@4.25; green steers thin to half fattened, 1,000 to 1,400 lbs., \$3.65@4; fair to good steers, 900 to 1,000 lbs., \$3.65@4; choice smooth fat heifers, \$4.20@4.60; fair to good fat heifers, \$3.70@4.10; light thin half fat heifers, \$3.25@3.65; good smooth well fattened butcher cows, \$3.65@4; fair to good butcher cows, \$3.10@3.50; common old cows, \$2.50@3. **Native Stockers, Feeders, Bulls and Oxen**.—Feeding steers, good style, weight and quality, \$3.75@4.15; feeding steers common to only fair, \$3.50@3.65; good quality yearling stock steers, \$3.90@4.10; stock heifers common to choice, \$3.25@3.50; export weight bulls, fat and smooth, \$3.65@4; good fat smooth butchers' bulls, \$3.25@3.65; fair to good sausage bulls, \$2.85@3.25; thin old common bulls, \$2.25@2.75; stock bulls, \$2.50@3; fat smooth young oxen, to good lots fit for export, \$4.25@4.50; fair to fairly good partly fattened young oxen, \$3.60@4.10; old common and poor oxen, \$2.25@3.50. **Milk Cows**.—Milkers strictly fancy, \$4.30@4.5; milkers good to choice, \$3.55@4.2; milkers fair to good, \$2.85@3.4; milkers poor to fair, \$1.85@2.5; springers strictly fancy, \$4.25@4.8; springers fair to good quality, \$3.42@4.2; common milkers and springers, \$1.40@2.0; old rimmer cows, \$1.12@1.2. **Veal Calves**.—Veals prime to extra, \$6.00@6.25; veals good to choice, \$5.50@5.75; veal calves common to fair, \$4.75@5.25; heavy fed and buttermilk calves as to quality, \$2.75@4.00. **Market Thursday steady and unchanged for cattle, higher for veal calves, which sold at \$5.75@6.25 for best.**

Sheep and Lambs.—Receipts Monday were 8,700, as compared with 8,000 the previous Monday; shipments were 5,600, as compared with 6,400 same day the previous week. The market on Monday was active and strong at about the same range of prices as a week ago. This applies to lambs, yearlings and sheep. The close was steady, with the pens well cleared. Monday, under light receipts, the market has ruled active and firm at an advance. Quotations on Wednesday closed at the following range: **Native Yearling Lambs**.—Good to choice, \$4.50@4.75; fair to good, 65 to 70 lbs., \$4.45@4.55; common to good culls, \$3.50@3.90; export yearlings, 95 to 110 lbs., \$4.25@4.50. **Spring Lambs**.—Good to fancy, \$5.75@6; fair to good, \$5.40@5.70; culls and common, \$4.75@5.25. **Native Clipped Sheep**.—Prime to fancy wethers, \$4.35@4.50; good to choice handy sheep, \$4.10@4.35; common to fair, \$3.65@4; culls and common, \$3.00@3.60; good to extra heavy export clipped mixed sheep to prime wethers quotable, \$3.50@4.50.

Thursday the market was easier, but quotations were unchanged. No demand from exporters.

Hogs.—Receipts of hogs on Monday last were 22,880, as compared with 22,230 for the same day the previous week; and shipments were 14,080, as compared with 17,280 for the same day the previous week. The market opened on Monday with a rather slow demand, but values higher on light grades, and about steady on others. The local demand was light, and this caused a dull feeling most of the day, although the offerings were about all taken. Since Monday receipts have been light, and all offered have been sold, but prices have declined from 5 to 7½¢ per hundred from the best prices of Monday. Quotations at the close on Wednesday were as follows: Good to choice light medium grades, 165 to 180 lbs., \$4.10@4.12½; good to choice pigs and light yorkers, 125 to 150 lbs., \$4.15; mixed packing grades, 180 to 200 lbs., \$4.05@4.07½; fair to best medium weight, 210 to 260 lbs., \$4.05; good to prime heavy hogs of 270 to 300 lbs., \$4.04@4.05; fair to good dairy fed grades, \$3.75@3.90; rough common to good, \$3.25@3.50; stags common to good, \$2.25@3; pigs light 105 to 120 lbs good to prime corn fed lots, \$4.10@4.15; pigs thin to fair light weights, 70 to 100 lbs., \$3.75@4.10; pigs, skips and common light and undesirable lots, \$3.50@3.75.

Thursday the market was firmer, yorkers selling at \$4.12½@4.15; other grades ranged from \$4.05 to \$4.12½.

CHICAGO.

Union Stock Yards, Aug. 12, 1897.

Cattle.—Receipts for last week were 57,994 head, as compared with 48,293 the previous week, and 51,411 for the corresponding week in 1896. Up to and including Wednesday of this week receipts have been 39,210 head, as compared with 38,273 for the same days last week. Business opened active on Monday for prime cattle, which were scarce, and even good cattle were in light supply. On the other hand there was a rush of butchers' stock, most of which was of the good to fair kinds of cows and heifers, all of which sold steady. The commoner grades were rather easier. Choice steers ranged from \$4.80@5.10; fair to good, \$4.55@4.75; poor to common, \$3.75@4.25; cows, \$2.23@3.90; heifers, \$3.40@4.50; bulls, \$2.50@3.50; veal calves, \$3.75@5.75. Since Monday the market has ruled active and strong, with prices on extra fat cattle showing an advance of 10¢ per hundred. Top prices for choice native steers on Wednesday were \$5.20@5.20; good to choice, \$4.60@4.90; common to fair, \$3.95@4.50; heifers, \$3.50@4.60; cows, \$2.30@3.90; bulls, \$2.50@4.25; western steers, \$3.40@4.50; veal calves, \$4.65@5.00, showing a decline of 25¢ since Monday.

Receipts Thursday estimated at 7,500; market strong to 10¢ higher, fancy steers selling up to \$5.30.

Sheep and Lambs.—Receipts last week were 71,163, as compared with 67,948 for the previous week, and 63,509 for the corresponding week in 1896. Up to and including Wednesday of this week receipts have been 49,938, as compared with 48,743 for the same days last week. On Monday the run of sheep was largely made up of westerns, the great bulk of which were sold for feeders at \$3.50 for the best and \$3.35 for others. Certain grades of western

lambs sold at \$4.25, and something trifle better at \$4.50@4.60. The low-priced western lambs were taken by the packers, but they were thin, not better than good feeders. Fair to good native clipped lambs and yearlings sold at \$4.25@4.75, and good native assorted spring lambs at \$5.00@5.25. Wednesday trade was active, with a slight upturn on prime mutton sheep and lambs, but the medium and ordinary sorts were unchanged, while common lambs sold 10¢@15¢ lower. Culls and common natives, \$3.50@3.85; something better, \$4.40@4.50; native lambs, \$5.10@5.30. Western mutton sheep sold at \$3.60@3.65; western feeding lambs, \$4.25@4.50.

Receipts on Thursday were estimated at 12,000; market steady and unchanged.

Hogs.—The receipts of hogs last week were 174,075, as compared with 130,104 the previous week, and \$6,013 for the corresponding week in 1896. Up to and including Wednesday of this week, receipts have been 71,718, as compared with 87,567 for same days last week. Trade opened active Monday, with prices strong from start to finish, with here and there a lot of prime mediums a nickel higher; most of the butcher weights showed a nickel advance, the market generally closing steady. Rough and common, \$3.25@3.50; prime heavy packers and good mixed, \$3.75@3.80; prime mediums and butcher weights, \$3.80@3.85; prime light, \$3.87½@3.90. Wednesday the demand was slow and uncertain from first to last, with prices 5¢@10¢ lower than the previous day, and closing rather weak at the lowest prices of the day. Rough heavy sold at \$3.40@3.50, but at the close buyers for good heavy sorts were willing to bid \$3.65 and could get all they wanted at \$3.70. Prime medium and butcher weights, \$3.75@3.87½, closing around the inside figures. Bulk of the light sorts sold at \$3.85, although there were a few early sales at \$3.90@3.95.

Thursday receipts were 25,000; market strong to 5¢ higher; light, \$3.75@3.95; mixed, \$3.65@3.90; heavy, \$3.45@3.85.

NATIONAL CROP REPORT.

The August report of the statistician of the Department of Agriculture shows the following average conditions on August 1: Corn, 84.2; spring wheat, 86.7; spring rye, 89.8; oats, 86.0; barley, 87.5; buckwheat, 94.9; tobacco, 78.7; Irish potatoes, 77.9. The condition of corn, 84.2, is 1.3 points higher than last month, 11.8 lower than on August 1, 1896, and 3 points lower than the August average for the last ten years. The principal state averages are as follows: Ohio, 85; Michigan, 85; Indiana, 92; Illinois, 93; Iowa, 78; Missouri, 87; Kansas, 70 (a drop of 20 points during the month); Nebraska, 84; Texas, 83 (a decline of 18 points); Tennessee, 90; Kentucky, 92.

The condition of spring wheat, 86.7, is 4.5 points lower than last month, but 7.8 points higher than on August 1, 1896, and 4.5 points higher than the August average for the last ten years. There is a decline of 8 points in Minnesota, 11 in South Dakota, 5 in North Dakota and 1 in Nebraska. The average condition of spring rye is 89.8 as compared with 90 last month, 88 on August 1, 1896, and 86.6 for the last ten years. The average condition of oats is 86, as compared with 87.5 last month and 77.3 on August 1, 1896. The consolidated returns indicate that about 10 per cent of the oat crop of last year is still on hand. The average condition of barley is 87.5, as against 88.5 on July 1 and 82.9 on August 1, 1896. The area in buckwheat is 4.8 per cent less than last year and the condition is 94.9, as compared with 96 at the corresponding period last year. The average condition of potatoes has fallen during July from 87.9 to 77.9, which latter figure is 16.9 points lower than on August 1, 1896. The condition of tobacco, taking the country as a whole, is practically unchanged, the consolidated returns indicating 78.7 per cent of a full crop, as compared with 78.5 per cent last month and 86.5 per cent on August 1, 1896. Kentucky shows a decline of 5 points, but Virginia and North Carolina have improved.

A lawyer brought a suit against a rich corporation for a man of good standing in the community and of rather exceptional attainments. In the course of his argument he declared in a loud voice, for the purpose of gaining the sympathy of the jury:

"Gentlemen of the jury, who are the parties to this important litigation? Why, on the one side there is a powerful corporation, with an overflowing treasury, and on the other side" (pointing to his client who was seated at the bar), "there is my poor, simple, uneducated client."

"Did you win your suit?" inquired a friend of the plaintiff a few days after. "Yes," was the reply; "I won my suit, but I shall never employ that lawyer again. He called me a fool, and the jury believed it."—Green Bag.

Bale Your Hay.

The difficulty attendant upon the marketing of loose or bulk hay has kept many a farmer from realizing the best returns from that crop. The man who wishes to receive the full benefit of a crop of hay to-day must market it in neat and compact form. Fortunately for the farmer, the inventive genius of the manufacturer has kept pace with the times and the modern hay baler is the result. Among other things there are these to be mentioned in favor of its use. The easiest, most economical and most convenient way of marketing hay is in bales. The compact, close-fitting bales enable the city feeder to store more hay in his room, and he consequently becomes a better buyer. Hay will keep better in bales than in bulk and collects no dust. There is less danger from fire and less interference from insurance companies. Among those machines which will perform this service in a most thorough and economical manner are the "Southwick" and "American" hay presses made by our advertising patrons, the Sandwich Mfg. Co., of Sandwich, Ill. These people declare that their machine will bale more hay for less money than any similar machine made. They are thoroughly reliable. Write them for catalog and prices before buying.

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Dawson's Golden Chaff has stood first among 53 varieties grown at the Agricultural College at Guelph, Ont., for three years, and for two years at the State Agricultural College, Lansing, Mich. It stood first among 10 varieties grown at the Experimental Station. Price per single bushel \$1.25; for 5 bushels \$1.15 per bushel, and \$1 per bushel for 10 or more bushels included in one order. Sacks 10¢ extra. Reference—R. M. Kellogg, Three Rivers, Mich.; Prof. A. M. Welch, Wm. Steele, Haddington Stock Farm, Ionia, Mich., all the banks and business houses of Ionia, Mich., and Reid & Carlton, Jackson, Mich. Samples sent upon application. DR. A. B. GRANT, "Fruit Park Farm," SANDSTONE, MICH.

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are writing us that they are preparing to enter the Agricultural College next term Sept. 13th.

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New vigorous blood, pure, clean, the best on earth. Write for samples and prices. Remember to double the yield is to double the price. Give my pedigree seed a trial. A. H. FOSTER, Allegan, Mich.

Horticultural.

For The Michigan Farmer.

HUNTING THE BORER.

Aside from the yellows, the greatest damage done to our peach trees is by the borer. Many are of the opinion that this little pest is more to be dreaded than the yellows, and often that which is attributed to this disease is nothing more than the borer. Experts can easily detect the result from the action of the borer.

The moth which lays the egg of this worm, resembles a wasp. It appears in this latitude in July and August, the eggs are laid on the bark of the tree and as they hatch out, work downward into the bark of the tree.

It is very easy to detect its presence, as it leaves a kind of sawdust mixed with gum from the tree at the point where they enter. They live in the roots nearly a year when they form a pod-like case in which they remain a few weeks, and then emerge as moths to begin to propagate their species.

There have been many ways suggested by which they might be exterminated, but there is yet only one safe and sure way of doing it, and that is to dig them out. Different kinds of wash which are directed to drive away the moth, have been tried, but after you have used them you will want to go around and examine the trees carefully to see if your wash has been effectual, which will be about as much work as to dig them out in the first place.

The operation of digging them out is not necessarily a slow one, but it should be done thoroughly and not trusted to any one but who will do the job carefully. The trees should be all examined in September and again in April. Where any are discovered, take a knife and cut away the bark where the borings are found, and with a piece of stiff wire spear the little pests to death. If it should be necessary to make a very large opening, the wound should be covered with some kind of covering, such as wet clay or mud or white lead.

Many people do not realize the danger of injury to trees from this insect, and before one is aware it will soon girdle a tree. I have found the inner bark completely eaten away so as to leave a space from one-quarter to three-quarters of an inch wide completely around the base of the tree. I found their tunnels into the roots as far as 12 inches from the surface of the ground. When they get as bad as this, it is nearly as bad to cut them out as to leave them to their own destruction, yet I saved several of my trees which I had to serve this way, and I lost several also.

I am trying the plan this year of mounding up about the trees early in the season, and when the eggs are deposited they will be laid just at the surface of the mounds, and after the period of ovipositing is past, which will be about September 1st, I will then remove the dirt and thus the larvae will be exposed and unable to reach the roots. I am not sure this will be a success, but as it will be no great extra work, I can afford to test it. Whatever the results, I will give the readers of The Michigan Farmer the benefit.

Kalamazoo Co., Mich.

B. A. WOOD.

(When the borer has done as much damage to the tree as in the instance referred to by our correspondent, would it not be a good way to take a small ball of cotton batten or old rags, saturate it with bisulphide of carbon, close up the hole, and thus strangle the insect. It is sure death to the insect, as the fumes will penetrate wherever there is an opening. This would save cutting the tree, which, of course, will further weaken it, and be much less trouble.—Ed. Farmer.)

GARDEN NOTES.

The present season was the coldest and most backward, up to July 1, that I have ever seen in my gardening experience. Continuous frosts were the rule up to that time at intervals of not to exceed about one week. Although these frosts were light, not enough even (in most localities) to cut off the corn or other tender vegetation, they seriously retarded the growth. Alaska peas which last season were ready for use June 17, were fully ten days later. Right here let me say, after a trial of most of the highly praised extra early sorts of peas, for a smooth pea I have been able to find nothing that combines the three qualities of earliness, yield and sweet, fine flavor, to the same degree as Alaska. In the

two seasons previous to the present one our Alaskas were fit for table use just 45 days from the time of planting, and in quality, if cooked before too much matured, they are pronounced by all who have tried them as nearly or quite equal to many of the wrinkled sorts. But this year, from the same seed, they were sown considerably earlier than last, and yet, as I have said, were fully ten days later in maturing.

Changing the location of my garden the present season, I have had my first experience in gardening on a real gravel soil. Different ones who profess to know all about this piece of land, told me I could make nothing grow here, as it was "nothing but a gravel bank." I told them I thought I could put in the fertility which would produce growth, and by the gain in warmth and drainage would perhaps lose nothing by the change from the heavier loam I had been using. I provided myself with a supply of good phosphate and also of stable manure, the latter of which I have used mainly as a surface mulch, and now the same ones are saying "I don't see how you ever get such a rank growth on that soil."

Radishes, of which we had a regular succession for the table since about May 15, grown in the open ground without glass, have never done better with me and seldom as well, on any soil. My choice in varieties of this toothsome vegetable is the white-tipped Scarlet Globe, sown every ten days through the season for a succession.

In beets nothing pleases us as well as the extra early Bassano, both for early use and sown later for storing for winter use. While many prefer the dark blood turnip and others of that type, because of deeper color, we find the cooking quality of this sort superior, being more sweet and tender, and we prefer to sacrifice color for these advantages.

As has for many years been my usual practice, I again this season planted early sweet corn during the last days of April—some two or three weeks earlier than is usually done in this latitude—and though, owing to the cold season, growth has been very slow, it has not been cut off by frost, and I expect to gain considerable in time of securing sweet corn fit for the table by this early planting. At least in numerous former seasons since I began this practice this has been my experience.

The best early variety of sweet corn I have ever been able to obtain is the Northern Pedigree, first disseminated some eighteen or twenty years since by the Rural New Yorker in their seed distribution. Besides being quite as early as the Cory and a dwarf corn of a similar type, it is a real sweet corn, which is more than can be said of the latter or any other extra early sort I have tested.

Speaking of peas, I meant to have said that for a later sort to follow the Alaska, nothing else pleases me as well as Telephone, which I greatly prefer to Champion of England on account of its growth, and I find it to be equal to that sort in productiveness as well as quality. I usually make two sowings of Alaska at an interval of a week or ten days, then follow with Telephone sown for a succession to the end of the season at similar intervals. In closing these notes I wish once more to emphasize the advantages of mulching in the garden with coarse, strawy manure, and urge a trial of the plan by those to whom it is new.

Delaware Co., N. Y.

B. E. J.

GRAPE GROWING IN MICHIGAN.

At the last meeting of the State Horticultural Society, Hon. C. D. Lawton gave a brief history of grape growing in the United States, and of its beginning and success in Michigan. On this latter point he said:

Grape culture, in this latitude, received its greatest accelerating impulse on the discovery or the originating of a few varieties which proved to be better adapted to general cultivation, to the conditions of soil and climate over a wide extent of country, or that was especially adapted to certain limited areas where they were produced of superior excellence and with certainty. Of these kinds there are three that are universally known and esteemed, namely, Concord, Delaware, Catawba. It is a singular fact that these varieties, which are the foundation of grape-growing as a market industry that has become so important in Michigan, New York, and Ohio, still hold the place they originally assumed at the head of the list—Con-

cord and Delaware as the best market kinds for general cultivation and Catawba for the special localities where it holds unrivaled supremacy.

In later years there has been an endless list of varieties of grape originated, some of which have been lauded to the skies, heralded with flourish of trumpets, and sent out at great cost to the purchaser. By such extraordinary efforts some of these productions have been extensively sold and planted and the originators have reaped considerable profits therefrom; but still the plain old Concord holds its place at the head of the list and is just as much a necessity as heretofore, as the basis for a vineyard, the most reliable grape for home and market use. Concord and Delaware are the two kinds that anywhere in the interior of our state insure success. The many new varieties come in and go out. The originators of them make money, possibly, but those who buy them and plant them in quantity do not. I wish it were otherwise. I wish we had a general-purpose grape that was superior to Concord; that is, one that had a thicker skin, a more tender pulp, was less likely to crack, was a better keeper, and withal was equally prolific, equally hardy, and equally well adapted to such various conditions of soil and climate.

But it is nevertheless a fact that with all its faults, the Concord yet stands without a peer, the foremost, hardy, productive, reliable grape for market and home use that we possess. If one sets a vineyard, he sticks to Concord. At Kelley island and along Lake Erie where the Catawba can be readily grown, that variety might take the preference, but not elsewhere east of the Pacific coast.

There are other black grapes of proved excellence for general cultivation that come before Concord in time of ripening, that are very desirable and should not be ignored. The best known of these are Worden and Moore's Early, given in their relative positions in point of preference, though the latter is the earlier in time of ripening. They are good for the table, hardy and reliable, and begin the season earlier.

The old, well-known Delaware is universally the favorite red grape. There are others that are fair to good, but none that possess all its merits, none to supersede it. Undoubtedly it is the best red grape in quality and the best for profit. Delaware vineyards here that are thirty years old are as vigorous and productive as ever, and if not so profitable as they were years ago it is from no fault of the vines. Formerly it was not unusual to sell the first shipments of the season of Delaware grapes for 60 to 75 cents per basket of five pounds each; and for single vines to net \$2.

There are other red grapes that are quite satisfactory, though not of equal merit with Delaware. Perhaps the most worthy of these with reference to general cultivation, are Brighton, Jefferson, and Salem may be added, in limited quantity. Brighton is of good quality, a fair bearer, is early, and sells well. Jefferson is later, one of the latest of the season. In fact, it may be left until snow comes and still be in good condition for market. It is a uniform bearer, of good quality, hardy, and sells well. Salem on high ground in good soil, with good care, is a profitable grape; one of the handsomest and best for table and market.

By far the best of the white grapes for general use is Niagara. I have a Niagara vineyard of 500 vines that has been set sixteen years, and while it has not equalled my expectations in matter of profit, it has paid fairly well as compared with other varieties. The Niagara grape is exceedingly variable in quality. Some vines will, perhaps, have fruit that is very good and others at the same time that is quite the reverse in quality. The same is true of clusters. Sometimes, on the same vine, where the fruit is well ripened it hangs well and is agreeable to the taste and holds its flavor to the last. The vine is a very strong grower and stands our severe winters in southern Michigan admirably. Of the white grapes it is the one for the vineyard par excellence. An early white grape worthy of consideration is Moore's Diamond. I have lately planted it quite largely, after giving it something of a test.

High rolling lands are best for vineyards; lands with sandy, gravelly, slightly loamy soil. On such lands, in southern Michigan, the kinds of grape I have mentioned are as sure as wheat or corn. Frosts will sometimes injure them, but not more often than other crops are so affected. In the production of any crop, certainty, or the near-

est we can attain to that desideratum, is an important consideration, and therefore in the cultivation of the grape in the interior of the State low lands are to be avoided. Only the hills, the high lands, should be chosen. It sometimes happens that vineyards on the low lands will yield a full crop of fruit, but perhaps as often they will not. There is certainly an equal likelihood of failure, and the quality of the fruit when it is produced will be inferior. Soil and location have much to do with the quality of the fruit, and it is unfortunate and distressing to have all the labor and expense of caring for a vineyard and have no return. The failure of the crop is a serious setback to most producers. The importance of elevation, of suitable location, is very apparent in this vicinity at the present time. In the latter part of May there were several quite severe frosts which injured the grapevines on low lands, in whole or in part destroying the young clusters of fruit. Fortunately by far the greater portion are so situated as to have wholly escaped injury. But there is enough to point the lesson.

In raising grapes commercially, the matter of situation with reference to market impresses itself upon the attention now as never before, for the reason that the vastly increased production has reduced the price of grapes to so great an extent that nearness to market or the cost and ease of transportation to market have become very important factors.

Unless there is a local market, and generally there is not, that will absorb the fruit, it must be shipped to a distant one, and it is essential to success that transportation shall be direct, ample and cheap. There is no use at all in attempting to raise grapes for market unless the facilities for transportation are every way favorable. The profits to the producer are too small, even under favorable circumstances, to justify one in expecting success too far from a main line of railway or regular lake transportation. The increase of trouble and expenses will be too great for profit. * * * *

It is certain that the growing of grapes for market will continue to remain an important fruit industry in this state. There is no fruit more bountiful, more healthful, more desirable in its season, and no fruit that under proper conditions will more munificently reward the cultivator for his care and labor. The occupation has its aesthetic, its sentimental side as well as practical and pecuniary. But it is not to be expected that everyone will betake himself to planting a vineyard. It is desirable, however, that enough should be raised to fully supply all markets, and that every garden should be provided with a few grape vines. There is certainly no reason in the world why every farmstead, every village home that possesses a garden, should not be supplied with a few choice vines properly trained and cared for. It is neglecting one of the choicest gifts of Providence in refusing to avail ourselves of the enjoyment of one of the choicest blessings that He has allotted to us.

THE APPLE CROP AND FOREIGN SHIPMENTS.

From a circular letter received from Lawrence & Co. of Boston, we take the following extracts of special interest to the apple growers of Michigan:

The season just passed will long be remembered for the largest crop of apples ever known, and for the largest exportation. It was a season of valuable experience, and important also from the fact that new markets for our apples were opened. During the coming season we are hopeful for a profitable business, and we predict a remunerative season. According to reports we have so far received we give the following information regarding the coming season's crop: New England—below an average, especially winter fruit. European crop—only fair. New York—below average along the lakes, a fair crop in the Hudson river valley. Virginia—a fair crop. Ohio valley—very light. Missouri, Arkansas, Kansas and Iowa—indications for an average crop. Michigan—under average. Nova Scotia—under average. Canada promises a fair crop. Baldwins generally reported comparatively light in all sections. The prospects are more favorable for Russets and the green varieties.

The facilities for shipping apples from Boston are unexcelled by any other port in America. The best equipped and fastest freight steamers

in the world ply between Boston and European ports. The steamers are especially fitted for carrying apples, having ventilator fans and cool storage.

The average time of voyage from port to port is from seven to eleven days. The port charges in Boston are very light; and on shipments made on through bill of lading from the West or South to Europe there are no port fees charged. On through shipments very low rates may be obtained, and the ocean freight on apples from Boston is generally considerably lower than from the other ports. Apples for European shipment should be the best keeping fruit, tightly and evenly packed. Red fruit sells best in the foreign markets.

VALUE OF THE TOAD TO THE FARMER.

The value of the toad as a destroyer of predacious insects is well understood by the fruit growers and gardeners of the old world, who secure all they can during the summer season to aid them in their fight against insect pests. The appearance of the toad is not at all favorable to his popularity, and most people regard him with aversion or fear. From an aesthetic standpoint, therefore, he is not worth considering, but his strong point is in his works, not his looks. A few toads in a cabbage patch will solve the problem of how to secure this vegetable from the attacks of its natural enemies. The omnivorous appetite of the toad, and the enormous capacity of its stomach, which requires constant exertion to keep filled, fits it in an eminent degree for an efficient aid to the horticulturist. A bulletin issued by the Massachusetts experiment station gives some interesting particulars regarding the toad and the good work he performs when given the opportunity. It says the toad lives ten to forty years, and does not begin to produce young till the fourth year. It has lived two years without food, but cannot live long under water. It never takes dead or motionless food. It takes its food by means of its tongue alone, and it operates this so rapidly that the eye cannot follow its motions. It captures and devours bees, wasps, yellow-jackets, ants, beetles, worms, spiders, snails, bugs, grasshoppers, crickets, weevils, caterpillars, moths, etc.

The station examined, with a microscope, the contents of the stomachs of seven toads in April, thirty in May, sixty-six in June, twenty-nine in July, ten in August, and seven in September—149 in all. On an average it was found that 80 per cent of the toad's food consists of harmful insects, and 11 per cent was of such beneficial insects as bees, spiders, lady bugs, etc.

The stomach that doesn't flinch at yellow-jackets, wasps, blister beetles and click beetles or pinch bugs, would seem to be prepared for anything in the insect line, and it doubtless is.

The quantity of food that a toad's stomach can accommodate is remarkable. In one were found 77 myriapods, in another 55 army worms, in another 65 gypsy moth caterpillars, in another 9 ants, 6 cutworms, 5 myriapods, 6 sow bugs, 1 weevil and 1 wireworm beetle.

In twenty-four hours the toad consumes enough food to fill its stomach four times. Feeding at the rate above mentioned, a single toad will in three months devour over 10,000 insects. If every ten of these would have done one cent damage, the toad has saved \$10.

Evidently, the toad is a valuable friend to the farmer, gardener and fruit-grower, and can be made especially useful in the greenhouse, garden and berry patch.

DOWNY MILDEW ON CUCUMBERS.

The extent to which the cucumber is grown in this State makes anything relating to it of interest to many of our readers. The Geneva experiment station has been experimenting with Bordeaux mixture as a remedy for the downy mildew, and finds it very effective. In this disease the leaves show yellow spots without any definite outline. In hot and favorable weather the spots enlarge rapidly and run together so that the whole leaf becomes yellow and soon dies and shrivels like a leaf killed by frost. In cool weather it does not spread rapidly. The disease invariably begins on the older leaves and extends toward the tips of the vines. After the disease is well established, very few cucumbers are produced by the vine, although it may continue to flower profusely and the few that are made are so misshapen as to be unsalable. The disease proved to be a parasitic fungus orig-

inally from Cuba and known as Plasmodium Cubensis, one of the downy mildews. The New York station made arrangements with one of the Long Island growers to make spraying experiments on one of his fields of the late cucumbers, and knowing the value of Bordeaux mixture for the destruction of the plasmodium when it attacks the grape, determined to use it on the cucumbers. The field was divided into five plats. No. 1, of ten rows, was sprayed seven times. No. 2, of six rows, was not sprayed. No. 3 of ten rows, was sprayed seven times. No. 4, of six rows, had two center rows sprayed and the rest left unsprayed, and No. 5, of ten rows, was sprayed seven times.

The spraying gave almost entire protection and a good crop was gathered on the sprayed rows, while those not sprayed failed early in the bearing season.

The Poultry Yard.

For the Michigan Farmer.

IN REGARD TO THOSE BLACK MINORCAS.

In the issue of The Farmer of July 31 the writer notes "An Explanation Requested" by "A Subscriber" from Shiawassee Co. It doesn't seem to us that much of an explanation is needed other than to suggest a careful reading of both articles in regard to the Black Minorcas, and the application of a little thought afterwards.

In an issue of The Farmer of December last, we made the statement that the Black Minorca "is not nor never will be a practical fowl." In the issue of The Farmer for July 17, the writer made the statement that the Black Minorca is "one of the most beautiful, and at the same time one of the most practical breeds, when placed under proper conditions." Your correspondent takes exception to these two assertions on the ground that they are not consistent. The writer will have to beg to differ in that they are not antagonistic. They are consistent and we trust that we shall be able to convince your correspondent of the fact.

In the first instance we stated that the Black Minorca was not a practical fowl, inferring that it was not practical from a farmer's standpoint. The writer had a perfect right to make the inference from the fact that the statement was published in a purely agricultural paper devoted to farming interests, the readers of which are fully 99 per cent farmers and hence read from a strictly farmer's point of view. We were not writing from a city person's or a suburban resident's point of observation but from one that was purely farmer.

In the July issue of The Farmer we did not make the statement that the Black Minorca is "the most practical breed of fowls we have," as your correspondent asserts, but "one of the most practical when placed under proper conditions." The wording of the two may be similar but the thought is quite different as the reader can very readily see.

In his comment your correspondent says, "It is my experience that almost any breed is good if placed under proper conditions." That is the idea exactly, and the very thought we endeavored to bring out. The Black Minorca is not a practical fowl except when placed under proper conditions. And as the requirements of the average farmer, who wishes an all-around fowl, are not consistent with what the Black Minorca can supply, it is obvious that this variety is not a farmer's fowl, hence, not a practical fowl for the average farmer. Yet, it by no means follows that because this variety is not a suitable fowl for the farm it will not be "one of the most practical breeds when placed under proper conditions." Because a scythe is not a practical implement for the farmer to cut his hay crop with, it doesn't follow that there are not conditions where it would be practical.

Suppose your correspondent had written to The Farmer last week that the Pit Game is not nor never will be a practical fowl (i. e., for the average farmer). This week he wishes to enlarge on the thought a little, so he says the Pit Game is one of the most practical breeds when placed under proper conditions. In the first place he makes the negative assertion and infers the

condition, viz., as a farmer's fowl. In the second instance he makes an affirmative assertion but qualifies by restricting his statement to a certain condition, which is in the main, or, in other words, where cock fighting is practiced. In the above supposed case would your correspondent contradict himself? Not unless making the same assertion in two different ways is contradiction.

To make it as clear as possible, to the reader, the writer will once more state our grounds for believing as we do. The average farmer wants a fowl that is a good layer and a good market specimen. While the Black Minorca is exceptional in the former, it is sadly lacking in the latter on account of dark shanks, which debar it from a first-class market; hence since it is not a good market fowl it is not a practical variety for the farmer.

Now, then, where would the Black Minorca be a suitable fowl? It would be in a place where the owner wants an exceptional fowl for eggs, an occasional specimen for the home table, but has no intention of selling for market.

What we have stated above and what was stated in previous articles on this subject was based entirely on personal experience. We have owned and bred the Black Minorca and trust that we will be given credit for feeling that we know whereof we speak.

C. P. REYNOLDS.

Shiawassee Co., Mich.

For the Michigan Farmer.

CONTROVERSIES DEPRECATED.

I should like to make some comments upon some of our correspondence in the poultry department. I find in The Farmer of July 31 that there is an article from some one signing his name "Subscriber," in which he would like to ask another his reason for changing his mind in regard to a certain breed of fowl. He also says he thinks a person would know something about what he is writing. We all admit this, and further we should have all our correspondents come to the editor in such a manner as not to provoke enmity. We hate to see a controversy between correspondents, as it tends to lead others to think that the editors do not care who writes so they get matter enough to fill up the paper. We personally know that is not the fact, as we have several times been in the office of one of the editors, and he has told us repeatedly that he receives correspondence which he cannot allow to be printed. So we think all those who write articles for the paper should know of what they write, and should not condemn one kind of stock or breed and say they are no good, for at the same time some other writer is trying to push the same kind or breed to the front. And again, in writing we should avoid copying from some other paper as much as possible. In one issue of The Farmer I found five items which I had just read in other poultry papers and the writer gets the credit for what does not belong to him, as he fails to give the name of the paper from which he takes them. We must all admit that we sometimes do copy in order to bring out our meaning so it will be understood better, but we can avoid copying altogether. We think The Michigan Farmer has as good a corps of correspondents as any paper in the State, and we also believe that it can be made better by avoiding this clashing with some one who does not agree with us in every particular.

Calhoun Co., Mich.

C. L. HOGUE.

(The suggestions made by our correspondent are wise and timely. In stating a preference for a particular breed it is not necessary to belittle another. If a writer is satisfied with the choice he has made, he should certainly be content to allow others to follow their own ideas. Criticisms should be impersonal and should only be indulged in to correct errors which might prove injurious. Writers should remember that the department is maintained to encourage and build up the industry, to help those who are making a start in the business and diffuse knowledge among the readers of The Farmer. Criticisms are all right when made in a proper spirit, and with a good object in view. They are all wrong when they are made the means of personally attacking an individual, or attempting to make him ridiculous. This is a petty spirit and should not exist among persons alike interested in the success of

this industry. Let us have your best and freshest ideas on the management, care and breeding of fowls, fair descriptions of breeds which will be borne out by practical tests, and you will be doing a good thing for the industry, and incidentally for yourselves.—Ed. Farmer.)

For the Michigan Farmer.

QUERIES AND ANSWERS.

M. A. Hopson, Owosso, Mich., writes: "What can I do to help my ducks?" You have fed your ducks too much, and they have indigestion. Stop feeding the meal either cooked or raw for a short time. Feed bread soaked in milk for a day or two; give some kind of poultry food in their feed three times a week; or, what is better, oil meal every day. This will bring them around all right in a short time. Ducks need to be watched as much as chicks in caring for them, especially in feeding, and should not be fed too much. If people will take care to look after this one thing they will never lose a duck, as ducks are seldom sick with any other disease except indigestion caused by overfeeding.

D. Vorburgh, Grass Lake, Mich., wants to know what ails his chicks. He says he has hatched 487 of them up to June 22, and has only lost about 5 per cent of them. We think he has been very fortunate, for we have lost a larger per cent than he has. He says he thinks the cold, wet weather caused the death of most of them. We know that is what caused the death of ours. He says some of his chicks at the age of about two weeks would have their eyes stuck shut. He says he greased them so as to allow them to open. Had he washed them with warm water containing a drop or two of carbolic acid, it would have been better than the grease. It is caused by the chick catching cold, and as soon as we get warm, dry weather they will be all right. It would be a good thing if our friend would give his chicks some tincture of iron in their drinking water, about a teaspoonful to two quarts of water every other day. This will help to strengthen them.

Calhoun Co., Mich.

C. L. HOGUE.

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STATE CROP REPORT FOR AUGUST.

Secretary of State Gardner has issued the monthly report for August, and it is given below:

The average yield of wheat per acre, as estimated by correspondents this month, is for the State 13.81 bushels; southern counties, 14.85 bushels; central counties, 11.18 bushels, and northern counties, 13.05 bushels. Compared with the estimate of July 1 there is an increase in the State and southern counties of about one and one-half bushels, in the central of 0.88, and in the northern 0.63 bushels.

Comparatively little threshing had been done when the reports were forwarded, but correspondents very generally report wheat turning out better than expected. A few exceptionally high yields are noted, but these at the most indicate no more than that a good crop has been harvested. A few such yields are always obtained in good wheat years. Actual threshings of more than single jobs are reported as follows: Berrien county, 842 acres, yield 11,378 bushels, average per acre, 13.51 bushels. Branch county, 105 acres, yield 2,103 bushels, average per acre, 20.03 bushels. Cass county, 858 acres, yield 14,460 bushels, average per acre, 16.85 bushels. Van Buren county, 118 acres, yield 1,537 bushels, average per acre, 13.03 bushels.

The crop has generally been secured in fine condition and is of good quality. The heavy rains in the central part of the State just at the close of harvest did some damage but it is not extensive. In a few fields the grain sprouted. In answer to question as to quality 342 correspondents in the southern counties report it good, 70 average, and 3 bad; in the central counties 86 report it good, 44 average, and 4 bad, and in the northern counties 43 report it good, 21 average, and 1 bad.

The number of bushels of wheat reported marketed in July is 665,294 as compared with 580,622 reported marketed in July, 1896, and the amount marketed in the twelve months, August-July is 10,130,876 bushels as compared with 9,250,104 bushels in the same months last year.

The average condition of corn in the State is 87, comparison being with average years. In the southern counties it is 86, central 90, and northern 88. Corn made rapid growth in July. July 1 the figures for the State and southern and northern counties were 75. One year ago the average condition in the southern counties was 104.

Oats are estimated to yield about 26 bushels per acre. This crop is not yet all secured, and the work has been somewhat delayed by rain.

Potatoes promise about seven-tenths, and beans nine-tenths, of an average crop.

The yield per acre of clover and timothy hay is slightly more than in average years. Meadows and pastures are now in fine condition. The average condition of clover sowed this year is, in the State 91, southern counties 88, central 98, and northern 91.

Apples now promise in the State about one-third, in the southern counties one-fourth, and in the central counties two-fifths, of an average crop.

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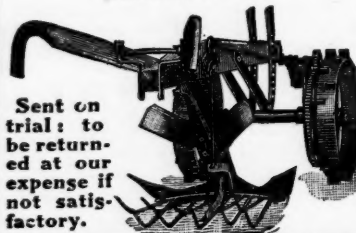
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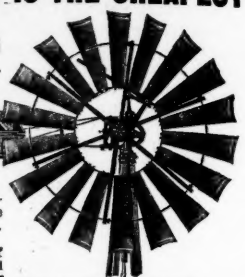
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